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THE JOURNAL OF PERIODONTOLOGY is published to serve as the professional journal of periodontia; to keep dentists in touch with research being carried on in this field and related sciences; to stimulate greater interest in the supporting tissues of the teeth and their relation to oral and general health. The plan to continue the publication of abstracts indefinitely, will make the Journal a fund of extensive information readily available to students, teachers, researchers and clinicians.

The Journal is the official organ of the American Academy of Periodontology and will contain therefore those papers of scientific interest which are presented at the annual meetings of that society. The entire proceedings of the 1932 annual meeting will be published in the January 1933 issue. This number contains the abstracts of articles on periodontia which appeared in the year 1930.

We are grateful to all who have made available the subject matter from which the abstracts and copies have been made, including the authors of the original articles, the Journals mentioned in the text of the abstract section, and those who have aided in any way in compiling the material presented.

We wish to express our appreciation also, for the encouragement received from many sources, especially from librarians, teachers and those active in dental journalism. The value of this cannot be overestimated, and we shall make every effort to be worthy of their continued approval.

Announcement

THE CHICAGO CENTENNIAL DENTAL CONGRESS

AUG. 7TH-12TH, 1933

BOOK REVIEWS

COLYER, SIR FRANK, K. B. E., F. R. C. S., L. D. S.

Abnormal Conditions of the Teeth of Animals in their Relationship to Similar Conditions in Man.

167 pp.; 217 illustrations.

(Review in Dental Cosmos of February, 1932)

This book is a compilation of lectures delivered by Sir Frank Colyer under the auspices of the Dental Board of England as part of a plan encouraging postgraduate study. The book arranges itself naturally into four sections, viz, (1) Injuries of the jaws and teeth; (2) caries of the teeth; (3) progressive destruction of tooth sockets; (4) positional variations of the teeth. Under heading (3) Colyer adopts the term *paradontal* disease in place of "pyorrhea alveolaris." Since the terms *parodontal* and *paradental* are already in use, a variation in spelling of either of these terms is unjustified and superfluous. Concerning this disease in animals, he concludes *inter alia* that "the bone lesion is a progressive rarefying osteitis commencing at the margin of the bone, and there is no evidence to support the claim made by some writers that the initial bone changes are of an atrophic character." He believes also that "the disease is due to an alteration in the environment of the teeth." The first and last sections of the book are devoted to interesting descriptions of injuries of teeth and jaws and of the arrangement of teeth in the dental arches of various animals. In making these studies Colyer examined numerous anatomic specimens collected in different parts of the world. Statistical records of the number and kinds of specimens, together with their dental findings, are reported. The book is profusely illustrated with clear, well-defined photographs and some photo-micrographs.

* * *

KANTOROWICZ, ALFRED. (BONN).

Encyclopedia of Dentistry.

Vol. IV, S-Z, 794 pp; 719 illustrations. 1931.

(From Review by Rudolf Kronfeld in Journal American Dental Association.)

The fourth and final volume of the Encyclopedia contains an index to the entire work in addition to the subjects under letters S to Z. The four volumes have appeared between the years 1929 and 1931 and both editor and editing firm are to be congratulated on their achievement. With 3377 pages and 3026 illustrations the encyclopedia represents the most extensive survey of modern dentistry ever published. It covers all phases of dentistry and its related sciences; practically everything that might interest the dentist, whether chemistry, law, metallurgy or equipment or any medical or other scientific subject. The coöperation of men outstanding in dental science as well as all related fields is a guarantee

of the authenticity of the material given. The chapter on "Pyorrhea" is written by Häupl. For the most part he considers inflammation in the etiology of this condition and does not enter very much into the other factors involved in this problem. It is surprising to find that some contributions on important subjects have developed into actual monographs. One point particularly evident even to the casual reader is the careful study of foreign bibliography revealed in the work of each collaborator. The American contributions especially are considered and brought into correlation with the work done in each field in Germany and other countries. It shows the extensive knowledge that a well-informed dentist should have, including research done in countries other than his own if he is to consider himself up to date. This international note is still lacking in most American writings and text books. The arrangement and appearance of the book, the clear illustrations and large clear print make its study easy and pleasant. It is only regrettable that this or a similar book is not available in English.

* * *

MELLANBY, MRS. MAY. (LONDON).

Diet and the Teeth: An Experimental Study. Part II, (a) Diet and Dental Disease. (b) Diet and Dental Structure in Mammals Other Than the Dog.

(From Review in Dental Cosmos of April, 1932)

The contents of Part II may be more specifically inferred from the chapter headings: (1) The development of normal and abnormal periodontal tissues under varying dietetic conditions (dogs and rats); (2) periodontal disease, including "pyorrhea alveolaris"; (3) discussion on the relation of the developmental structure of the periodontal tissues to their subsequent resistance to disease, including "pyorrhea alveolaris"; (4) dental caries in dogs; (5) dental caries in rabbits and rats, with a note on caries in Macacus monkeys; (6) the response of the teeth of animals to attrition, with a note on the histological structure of secondary in relation to primary dentin; (7) factors influencing the calcification of rabbits' teeth and jaws; and (8) factors influencing the calcification of rats' teeth and jaws. Short summaries are inserted after the various sections throughout the text and "General Summary and Conclusions" are given at the end. Twenty-eight plates from photo-micrographs are appended. The "General Summary and Conclusions" of that part of the text concerned with periodontia follows: "An Experimental Inquiry into the Etiology of Periodontal Disease, Including 'Pyorrhea Alveolaris'. It has been found possible to produce or to prevent periodontal disease, including pyorrhea in dogs, and the success obtained suggests that experiments on animals will prove a promising line for the elucidation of this important problem. Periodontal disease has been induced in a number of dogs which have been brought up from birth under carefully controlled dietetic and environmental conditions. A deficiency of vitamin A in the diet leads to hyperplasia of the subgingival epithelium and to its subsequent invasion by pathogenic organisms. A deficiency of vitamin D, on the other hand, results in defects of the alveolar bone. A significant fact in connection with the experimental work on periodontal disease is the relative importance of an adequate diet during the early period of life, when the teeth and periodontal tissues are developing. If a puppy's diet has been deficient in vitamins A and D during the early months of life, the dog is liable to develop periodontal disease at a later stage, whatever the subsequent diet. On the other hand, a perfect diet in the developmental period either prevents or greatly inhibits the production of periodontal disease at a later stage, even if the diet is subsequently deficient in vitamins A and D."

ABSTRACTS AND EXTRACTS OF CURRENT DENTAL LITERATURE FOR 1930 ON

(a)—Periodontal Histo-pathology

(Continued from January, 1931 issue, page 74)

1930

83—Aisenberg, M. S., D. D. S.: **A tear in the cementum,** in: Jour. Dent. Res., x: 599-600. 1930.

A case is reported of a tear in the cementum with a known history of trauma due to resection. The break is clearly evident in the photomicrographs showing a cross section of a portion of a root of a human upper lateral incisor on which resection had been performed. The author concludes that the connection between cementum-dentine is stronger than that of the lamellae of cementum itself, in this confirming the opinion of Figg previously expressed.

—*A. H. M.*

84—Brammer, Dr. Friedrich (Marburg): **Ueber Lamellen und Büschel im Schmelz menschlicher Zähne.** Lamellae and tufts in the enamel of human teeth, in: Dtsch. Mschr. f. Zhkde (10): 753-64. 1930. Abs., Z. Rdsch., xl(9): 387. 1931.

The lamellae develop independently of the enamel cracks. Miller's working hypothesis in 1902 is confirmed by more recent investigations; this was that the strands of organic matter running between the enamel cuticle or Nasmyth's membrane and the dento-enamel junction were to be regarded as non-calcified enamel prisms. (These have been described by Bödecker of Columbia.) In particular, Miller recognized correctly the relation of the lamellae to the cracks which he himself described; both may occur together, but are not identical in their origin.

—*Transl. of abs.*

85—Grubrich, Werner (Univ. Tübingen): **Veränderungen an orthodontisch bewegten Zähnen.** Changes in artificially moved teeth, in: Ulm. Korresp.-Bl. f. Z. liv(4): 153-68. 1930. Abs. Z. Stomat, xxix: 324. 1931.

Radiographs and histological researches after corrective treatment show that radiographically no evidences of resorption are demonstrable even by forced movement and lapse of time after close of treatment. On the other hand in the histologic picture are constantly present lacunae of resorption not very large and by cement deposition made still smaller; so that they are hardly significant in respect to later loosening of the teeth. These evidences of resorption lie in the coronal half of the root where the widest excursions are made,—the pivotal point of the tooth lying in the apical half.

—*Transl. of abs.*

86—Hopewell-Smith, Arthur, Sc. D., M. R. C. S., L. R. C. P.: **The process of osteolysis and odontolysis, or so-called "absorption of calcified tissues.** A new and original investigation, in: D. Cosmos, lxxii: 323-345. Apr., 1930. May, 462-73. June, 610-23. Sept., 912-25. Oct., 1036-48. Nov., 1151-59.

The author compares the dissolution of the roots and shedding of the deciduous and permanent teeth, the first usually painless and with but mild inflammation, the latter always the result of marked inflammation. In both cases dissolution of the alveolar process and alveolo-dental periosteum accompanies that of the tooth root. The dissolution of the deciduous root and surrounding process is not the result of pressure from the succeeding permanent. The dissolution process is not in any sense an atrophy. The author holds that the alveolar process is a

transitory structure,—the direct analogue of the bone of a tooth in the fishes. It differs in important histological respects from bone elsewhere; it is less resistant to injurious encroachments. Once the alveolar margin is lost it cannot be reformed.

If the Sharpey's fibers of the alveolo-dental periosteum are detached from the alveolar bone or cementum, their refixation is utterly impossible.

(No proof is submitted for this teaching which is quite contrary to the clinical experience of periodontists and oral surgeons; and to the recent histological evidence of W. C. Fleming, as yet unpublished. H. J. L.) Furthermore, operative intervention in this region cannot help but lead to further destruction of the alveolar bone and the alveolo-dental periosteum.

On pages 463-473, the author discusses the dissolution of the roots of deciduous teeth showing that excavations occur on parts of the root far removed from the advancing permanent tooth. The words "absorption" and "resorption" as applied to the dissolution of calcified tissue, he regards as unsatisfactory. Bone may be dissolved in the absence of giant cells, and Howship's lacunae may not always be present.

(Alveolo-dental periosteum). pp. 610-623. The alveolo-dental periosteum cannot be separated histologically into two layers. The author objects to the inexact names usually given to it. He discusses the minute histology, giving several excellent photomicrographs. He shows that Black's conception of several fiber groups distinct in their directions as transverse, oblique, etc., is based on histologic studies of a cat; no such definite arrangement can be demonstrated in man. The human cementum is also very different from that of the cat. He proves by photomicrographs the presence of tunicated vessels in contradiction to Warwick James and A. Counsell (Brit. Dent. Jour. Oct. 15, 1927). He shows also a picture of individual myelinic (sensory) nerve fibers, the first, he says, to be depicted by photography. He claims that the so-called annular ligament of Stöhr cannot be demonstrated in human specimens and neither can the so-called "glands" of Black.

pp. 912-925. This chapter deals with the use and significance of the terms osteolysis and odontolysis, and makes a comparison of phagocytosis and osteolysis. It has no special bearing on the problems of periodontology.

(Evidences in the cat) pp. 1036-1048. The histologic processes involved in the dissolution of the roots discovered to be common in stray cats (200 specimens studied). Probably due to defective diets, these cats develop severe purulent gingivitis leading to progressive periclasial pockets involving loss of the alveolar bone. At the base of these pockets a very active granulation tissue attacks the tooth structure, eventually cutting the crown from the root tip which is subsequently dissolved. The cells engaged in dissolving the tooth structure are studied. Giant cells, when present at all, in these areas are apparently conglomerations of spent plasma cells and are not active. Plasma cells are believed to be the active odontolytic cells. Some new observations on the physiologic dissolution of the roots of deciduous teeth are made.

pp. 1151-1159. (Evidences in man). Sections of human material are shown, illustrating the fact that solution of the alveolar bone and tooth structure occurs as a result of granulation tissue activity. A discussion of the terms used indicates that the word "osteolysis" should be used for the complete dissolution of bone and "odontolysis" for the complete dissolution of dental tissue. The word "osteoclast" should be abandoned, since the giant cells hitherto believed to be the bone destroying cells evidently do not have that function. The term "eiocyte" is introduced to replace "wandering cell," and "eiozymocyte" indicates a wandering cell capable of emitting a digestive ferment ("eiocytase").

—*H. J. L.*

87—Korff, Prof. Dr. Karl von (Rosario, Argentina): Die Zusammensetzung und Entstehung der sogenannten Nasmythschen Membran und der Cuticula dentis primitiva. The composition and origin of the so-called Nasmyth's membrane and the primitive dental cuticle, in: D. Mschr. f. Zhkde, xlviii(11): 817-30. 1930.

The so-called Nasmyth's membrane arises from a deposition of inorganic or dead foreign organic material on the free enamel surface through salivary action; thus it is not a true tissue formed of histologic elements. It has nothing to do with the primitive dental

cuticle, which is an organic formation of the combined inner and outer layers of the enamel membrane.

—Transl. from article, H. A. R.

88—Kotányi, Dr. E. (Vienna): **Ein weiterer klinischer Beweis des kontinuierlichen Zahndurchbruches.** A further clinical proof of the continual eruption of the teeth, in: Z. Stomat., xxviii(11): 1055-57. 1930.

According to Gottlieb's theory, the continuous eruption of the teeth is a two-fold process; on the one hand the epithelial attachment moves continuously toward the apex, while on the other hand the teeth move occlusally. Both these aspects are abundantly supported by histologic findings. As a further proof of the correctness of his conception, Gottlieb cites the case of a female patient about 40 years of age who complained that a lateral incisor constantly grew shorter. The radiograph showed a contact between a retained cuspid and the root tip of the sidewise standing incisor in question. By this impingement the lateral incisor had become fixed in the jaw so that from this time on, it could not possibly move occlusally. In this way a mark was made which showed what level the teeth had reached at the time the contact was made. Subsequently all other teeth of the denture moved in the direction of the occlusion, but the incisor was forced to remain in its place. The patient thought it was the incisor which was guilty of a progressive change of position; but in reality, this tooth was firmly fixed, while the others constantly became longer by the physiological occlusal shifting. Some years later, similar cases were described by Sicher (Z. Stomat. (4) 1928).

The author then reports with radiographs a case of successful replantation of the two right incisors of a 14-year-old boy. Four and one-half years later, the root of the median incisor is almost completely resorbed; bone is present in its place, and the earlier fusion between bone and teeth is plainly shown. Both teeth are entirely firm and the apparent shortening of the teeth in relation to their neighbors is further evident. In the roof of the mouth a depression is present at the site of the shortened teeth as compared with the other side. The holding back of the two incisors and the advance of the other, has, as might be expected, retarded the corresponding development of the palatal portion on the right side.

—H. A. R.

89—Kronfeld, Rudolf, M. D.: **The epithelial attachment and so-called Nasmyth's membrane,** in: J. Am. Dent. A., xvii: 1889-1907. Oct., 1930.

A critical discussion with excellent photomicrographs in substantiation of the ideas of Gottlieb and Orban. The epithelial attachment (Ansatz) is defined as the band of epithelium which has united with or is in organic connection with the tooth surface. It lies between the base of the gingival crevice and the line of furthermost apical penetration of epithelium on the tooth surface. At the time of eruption and for some time thereafter, this line of furthermost penetration is at the amelo-cemental junction; but, as the gingiva recedes the epithelial attachment pushes further and further along the cementum.

The base of the crevice is at first high up on the enamel, but in old age has progressed onto the cementum. The depth of the crevice varies; in young persons and animals there may be no crevice. Photomicrographic proof of attachment of the epithelium to the enamel is furnished. The progressive development of the epithelial attachment in man is compared with that in animals with persistently growing teeth, and to those whose enamel is covered with cementum.

The nature of the dental cuticle is discussed; it is shown to consist of two layers, —a thin inner layer and an outer layer or secondary cuticle produced from the oral epithelium which may or may not be hornified. The inner layer consists of the remnants of the ganoblasts which may be calcified and thus dissolved in course of preparation.

The hornified cuticle is unevenly distributed in the section shown; it is present on both enamel and cementum. The author thinks that the hornified patches offer areas of resistance to caries.

—H. J. L.

90—Meyer, Wilhelm (Breslau): **Neue befunde am epithelansatz.** New findings concerning the epithelial attachment, in: Ztschr. f. Stomat., xxviii(8). 1930. Abs. J. Am. Dent. A., xvii(8): 1965. Oct., 1930.

Since Gottlieb's publication on this subject in 1921, it has been generally accepted that the epithelium is attached to the enamel surface in young individuals and that this epithelial attachment in young teeth ends at the cemento-enamel junction. Meyer, in 1929, published histologic findings on young human teeth, indicating that the epithelial attachment does not necessarily end at the cemento-enamel junction, but that the epithelium sometimes ends on the enamel, leaving a part of the enamel toward the cemento-enamel junction uncovered. In his recent publication Meyer describes the findings on the jaw of a boy, aged 18. He shows that on almost all the teeth in this jaw, the epithelium ends above the cemento-enamel junction on the enamel. The apical part of the enamel is partially covered by cementum. These findings are an interesting contribution to the question of the relation between the epithelium and tooth surface. They indicate that the presence of the deepest point of the epithelium at the cemento-enamel junction might be due to a secondary process, as the end of the epithelium in earlier stages can be found farther up on the crown.

—*Rudolph Kronfeld. Copy.*

91—Mowry, D. P., D. D. S., L. D. S. (Montreal): **Innervation of the gingivae,** in: J. Am. Dent. A., xvii: 1050-1059. June, 1930.

To demonstrate nerve endings in the epithelium tissues were stained by two methods —one a modification of the Ranvier Cohnheim gold chloride method, and the other a modification of the Bielschowsky silver nitrate method. (Both technics described.) Sections were in the form of crescent-shaped excisions from gingival margin of human gum. Illustrations accompany the article. The author quotes from Talbot: "While the nervous system has other special functions, the one great object is that of regulating growth and repair. As Marinesco has shown, this function resides even in the neuron or nerve unit. Growth and repair are regulated through the trophic and vaso-motor systems."

The author proposes the theory that this is another link in the chain of clinical evidence that healthy gums are to be had when normal function is established.

Foods do not sufficiently stimulate the gums. The toothbrush used in such a manner that the points of the bristles scour the teeth and the sides of the bristles vigorously press and bump against the marginal gingivae, will cause a stimulation of the nerve endings in the epithelium.

—*M. M. B.*

92—Norberg, Olof (Stockholm): **Zur Kenntnis der dysontogenetischen Geschwülste der Kieferknochen,** in: Vrtljhrsschr. f. Z., xlvi(3): 321-355. 1930.

Summary of author:

1. Among the dysontogenetic tumors of the jaws may be reckoned in the front line the adamantinomas and the odontomas. Both arise from a basis of aberrant embryonal tissue, i. e., of a tissue malformation.

2. As a third group an obviously rare tumor may be added which develops like the two first named, but with the impress of a definite tissue formation (resembling cement tissue). It appears likewise to be erected on the foundation of a tissue malformation.

3. The matrix of this tumor consists of a tissue rich in cells and vessels, in varying stages of maturity, in which appear, among bone cement like formations, partly granular, partly globular drop-like calcification areas.

4. This cementoblastic "Osteoidsarcoma" appears in cases seen by us in the jaws in multiple form.

5. Since the tumor is surrounded by a bony tissue capsule, its manner of growth in spite of the histological picture may be regarded as benign.

6. The method of operation has for its aim, with special reference to the slowness of its growth and relative benignity, a radical elimination of the multiple foci with the surrounding capsule, without danger to the continuity of the jaw.

—*Copy.*

93—Orban, Balint, M. D. (Vienna): **Hornification of the gums,** in: J. Am. Dent. A., xvii: 1977-1995. Nov., 1930.

By correct mouth hygiene hornification of the gingivae propria can be obtained in every case, in some less and in others more marked. A normal and properly hornified gum is firm

and pale pink, and tightly attached to the teeth and does not bleed under common mechanical insults. Attempt should be made to produce hornification by scaling and teaching the patient a rational toothbrushing method with massage of the gums. Paper is beautifully illustrated and should be read by every dentist.

—*M. M. B.*

94—Schniter, Dr. Max, M. D. (Zürich): **Beitrag zur Frage des Epithelansatzes.** Contribution to the problem of the epithelial attachment, in: D. M. f. Zhkde, xlviii(9): 705-15. 1930.

The author believes in the Gottlieb theory, that the tooth is a temporary structure destined to fall out. In all cases studied he found an epithelial proliferation. All his findings pointed to the fact that proliferation, dehiscence and separation of epithelium from the tooth root are phases of a physiological process of involution, that they are in direct relation to other developmental processes, and only ended with the loss of the teeth.

—*H. A. R.*

95—Skillen, William G., D. D. S.: **The morphology of the gingivae of the rat molar,** in: J. Am. Dent. A., xvii(4): 645-668. Apr., 1930.

"Subsequently to beginning eruption stages of the molar teeth of the rat, slowly operating changes take place which alter materially the structure of the gingivae as time goes on. These changes, at the present time, have been traced into the third year of adult life of the animal.

"1. On atrophy of the ameloblasts, a thin membrane, which may probably be called a 'primary cuticle' puts in an appearance. This membrane is probably attached to the enamel, and in turn, the epithelial attachment, which is the remains of the enamel epithelium is attached to it.

"2. At the same time, other changes are going on, the sequence of which seems to be as follows: (1) proliferation of the mouth epithelium downward behind the epithelial attachment; (2) atrophy of the latter in the process of which it slowly assumes the appearance of keratinized epithelium; (3) keratinization of the surface of the proliferated mouth epithelium; (4) separation of the mouth epithelium from the atrophied epithelial attachment, the line of separation being the keratinized layer of the former.

"3. While the proliferating mouth epithelium is still some distance from the enamel-cemental junction, and its keratinized layer still farther away, the epithelial attachment begins to grow down the cementum.

"4. This proliferation of the epithelial attachment along the root surface seems to occur in the entire absence of any visible pathologic condition.

"5. A certain ratio of change seems to prevail between the different processes, which inflammation seems to disturb.

"6. Inflammation may induce a more rapid growth on the part of the mouth epithelium in particular, but apparently causes an irregular, papilla-like growth of the basal layers of the epithelial attachment.

"7. In most instances, in this material, no measurable pockets seemed to exist except where they were the result of trauma."

—*Author's summary.*

(Paper is accompanied with excellent illustrations and complete bibliography.—Ed.)

96—Skillen, William G., D. D. S.: **Normal characteristics of the gingiva and their relation to pathology,** in: J. Am. Dent. A., xvii: 1088-1110. June, 1930.

Paper deals with the normal structure of the interproximal gingivae in the molars of the rat; the changes which occur normally in the labial, buccal and lingual gingivae of the dog, and the relation which seems to exist between the epithelium of the gingivae and the development and progress of pathologic change in the gingivae. The definite conclusion is drawn that the shallower the pocket, the better the chance that the subepithelial tissues will not become involved. The arrangement of the gingivae should be preserved intact.

It was indicated by the research that the epithelial attachment alone seems to afford little protection against the spread of infection into the subepithelial tissue. The proliferated mouth epithelium was the thing which hindered this and its efficacy seemed to be increased by the keratinization of its surface.

This research is a definite contribution to periodontia. The report is generously illustrated.

—*M. M. B.*

(b)—Periodontal Bacteriology

(Continued from January, 1931 issue, page 83)

1930

27—Cook, Thomas J., D. D. S.: Periodontoclasia: **The relation of diseases of the periodontium to systemic disease,** in: J. Am. Dent. A., xvii(5): 880-889. May, 1930.

This author states that the streptococcus, usually the green-producing, is the predominating organism in the pockets resulting from periclasia, and the chief one to be reckoned with in metastatic infections.

By a series of case reports on chronic infections, arthritis, iritis, chronic ulcerative colitis and gastric ulcer, he shows the tendency of the streptococci when removed from lesions in the mouth of the patient to elective localization when injected in rabbits.

Commendable and interesting research.

—*W. Y.*

(Cook, T. J.: **Pyorrhea alveolaris as a focus of infection,** in: Proc. Staff Mayo Clinic, iv: 269-270. 1929.)

28—Keilty, Robert A., M. D.: **Gingivitis. Character of the exudate in gingivitis,** in: Jour. Lab. and Clin. Med., xv(5): 495-503. Feb., 1930.

The presence of exudate in the gingival sulcus is an indication of inflammatory change in the gingiva; it is always present in gingival disease but varies greatly in character depending on the micro-organisms predominating and on the peculiar reactions of the patient. Material found in smears of exudate may contain red and white blood cells, food débris, individual epithelial cells or masses, calcareous material and bacteria. Gingival spirilliform organisms, with the exception of Treponema pallidum are grouped under the general head of Borrelia Vincenti. These are constantly found in gingival exudates; in proper preparations they may be seen attacking red blood cells. In chronic cases these organisms are sluggish in movement and short (3 microns); in active inflammation rapid in movement and long (up to 15 microns). They have not been satisfactorily cultivated. They are not present in normal mouths.

The author believes the active organisms are the cause of acute ulcerative gingivostomatitis. He includes pyorrhea and Vincent's gingivitis under the single term gingivitis. Other organisms described are the fusiform bacillus, lacto-bacillus, vibrio sputigenus, leptothrix and cocci obtained by culturing. Protozoa include endameba gingivalis, trichomonas, Bodo, Balantidium and Giardia. The seasonal variation of predominance of certain types, like pneumococcus, is noted.

The author feels that the bacteriologic factor in gingivitis is much more important than generally conceded and deserves much more intensive study.

—*H. J. L.*

* * *

Supplementary—Other Laboratory Researches—1928-29

97—Cabrini, Romulo (Buenos Aires): **Articulacion alveolo-dentaria.** The alveolo-dental articulation, in: Revue odontológique, xlix(2): 57. 1928. Abs. **Fortsch. d. z., v(2): 341. 1929.**

While formerly the setting of the human tooth in the alveolus was looked upon as a mere insertion, a *gomphosis,* newer researches have shown that we have to deal with a true articulation formed by aid of the circular ligament and the periodontium.

The simplest example of such a connection is seen in the teeth of sharks and rays which are held in gum and submucosa merely by fibrous tissue. A step further in evolution gives us the teeth of *reptilia,* in which, between the root of the tooth and the bone exists a sort of articulation showing cemento- and osteoblasts as well as fibres.

The final step is reached in the human, in whom, the circular ligament is present in addition to the periodontium.

Since it was not possible for Cabrini to obtain suitable material from a human mand-

ible, he presents the findings from the jaw of the dog. The sections were hardened in 10% formalin, decalcified a week later with a mixed solution of HCl, 8 parts; sulfuric acid, two parts; and water, 100 parts. Forty-five days later they were ready for examination.

The *ligamentum circulare* forming the upper portion of the articulation consists of an ectodermal and a mesodermal layer. The ectodermal layer is represented by the *stratum pavimentosum* of the gingiva; while the mesodermal layer consists of chorion and submucosa. The *stratum pav.* shows all the usual characteristics of the oral mucosa and ends in a rounded margin which encircles the neck of the tooth.

The mesodermal layer forms the real attachment of the ligament to the tooth and lies in conjunction with the periosteum of the tooth. Some of its fibers penetrate into the cementum.

Below the circular ligament lies the periodontium, whose fibers take an S-shaped course and run horizontally only at the top of the tooth root section. They diverge upward and downward, until they finally leave an open space near the *foramen apicale,* which serves as a passage for the vessels and nerves, acting on the one hand as their protection, and on the other hand as shock absorber for the movements of mastication. The fibers themselves are partly elastic and partly collagenous; and cemento- and osteoblasts are distributed among them in small numbers.

—*H. A. R.*

98—Ruggieri, E. (Rome): **Sulla sopravvivenza dei leucociti dolle gengive in condizioni normali e patologiche.** The survival of leucocytes under normal and pathologic conditions of gums, in: La stomatologia, xxvi: 803-887. Aug., 1928. Abs. in Fortschr. d. Zhkde., v(2): 763. 1929.

The author has made experiments which he describes in detail. These gingival leucocytes in the author's opinion, pass by diapedesis out of the capillaries of the submucosa. Hypotheses of their origin from the salivary glands, the lymph glands of the Waldeyer's rings or from gingival hemorrhages are laid aside by experimental arguments.

The author's conclusions are as follows:

1. On the normal gingiva leucocytes in large numbers are found only after tooth cleansing by means of the toothbrush.

2. These leucocytes come only from the gingiva and not from other parts of the oral cavity. This is for the reason that none are present upon gingivae equally normal, but unsubjected to the cleansing of the toothbrush.

3. These leucocytes found upon the gingivae are very long lived; they are phagocytic and thus apparently protect the organism hourly and daily. This is shown by their ameboid movements which may be observed at temperatures ranging from 37 to 45 degrees C.

4. They are all polynuclear and neutrophile.

5. In pyorrhea they are very numerous and more long lived than those of the normal gingiva.

6. Leucocytes from pyorrhetic gingivae are of normal size; those of the healthy gingivae are usually larger than normal.

7. Thymol and menthol in ordinary solutions do not stimulate the diapedesis.

8. These substances have no influence upon the life span or the phagocytic activities of the leucocytes found upon either healthy or diseased gingivae.

—*H. A. R.*

99—Huber, J.: **Der faserverlauf des periodontiums und seine entwichlung im milch—und bleibenden gebiss, dargestellt an einem unteren schneidezahn der katze.** The course of the fibers of the periodontium and their development in the milk and permanent dentitions, as presented in a lower incisor of the cat, in: Zeitschrift d. Anat., xc(1): 64. 1929.

The author presents logically the anatomic outlines of the constructive form of the periodontium, enriched by numerous and valuable photomicrographs of sagittal and horizontal serial sections of the lower jaw of the cat. As typical material, the lower second incisor is chosen and followed through the different phases of its development. The author states that although he has carried through this systematic investigation of the course of the fibers of the periodontium in the different phases of the milk and permanent dentitions, he has not yet discovered the functional significance of all these structures. This is an exhaustive and commendable study; but, after all, the courses of these fibers vary so widely that no absolutely final statements can yet be made.

—*H. A. R.*

(c)—Other Laboratory Researches

(Continued from January, 1931 issue, page 91)

1930

21—Back, Dr. Heinrich and Dr. Walter Redisch (Prague): **Die Kapillaroskopie der Gingiva.** Gingival capillaroscopy, in: Z. f. Stomat., xxviii(6): 552-556. June, 1930.

Capillaroscopy has thrown some light on gingival diseases e. g., pyorrhea alveolaris; paradentitis; paradentosis; diffuse atrophy; gingivitis marginalis, superficial and deep. By its means it has become possible to determine normal changes in the human gingiva and to demonstrate clinically certain stigmata due to inner secretory gland disturbance; such disease of the gingiva showed the following conditions:—(1) Total or severe gingival hyperemia, (2) easiness of bleeding, (3) gingival retraction, (4) loosening and falling out of sound teeth. No inflammation was demonstrable capillaroscopically. The authors named the condition: "gingivitis of endocrine disturbance with or without pyorrhea." In a case of Basedow's disease, the writer observed remissions and exacerbations; when the condition of patient was worse, the gingival hyperemia increased, also the tendency to hemorrhage. As the causal conditions in other cases improved, the capillary changes receded and vanished.

The author's researches proved that not only in some cases of gingival affections were the patients free from inner secretory changes, but a great portion of the cases were endocrinely sound. In such cases, the capillary examination showed a purely inflammatory process.

Obviously, an inflammation may occur in cases of endocrine disturbance. Perhaps the capillary system of the gingiva affected by endocrine imbalance is specially predisposed to the establishment of a true inflammatory process, as in diabetics.

The article continues with the description of interesting plates, etc. by the junior author.

For article on technique of capillaroscopy see Jour. of Period. Abs. no. 62, p. 174 ii(2) July, 1931 (Kolm-Grob.)

—Transl. from article by H. A. R.

22—Dalldorf, Gilbert, M. D. and Zall, Celia: **Tooth growth in experimental scurvy,** in: Jnl. Exper. Med., lii(7): 57-63. July, 1930. Abs. D. Cosmos, lxxii(11): 1231. Nov., 1930.

Conclusions by the authors.

(1) The incisor teeth of guinea pigs have a constant rate of growth in health.

(2) Deprivation of Vitamin C causes the teeth to stop growing. Readministration of the vitamin restores the growth.

(3) Administration of small amounts of anti-scorbutic substance results in rates of growth roughly proportional to dosage.

(4) Under standard experimental conditions used in the testing of food-stuffs for anti-scorbutic value, the rate of tooth growth would appear to be a precise indication of the degree of scurvy, being more delicate than the Sherman score, and more constant as well as more simple than the Höjer method.

(5) Stress in terms of usage appears to exaggerate the scorbutic lesions in the teeth.

—Copy

23—Kaushansky, L. I. (Leningrad): **Chemical analyses of teeth roots and crowns affected by pyorrhea alveolaris and dental caries** (analyses of Calcium content), in: D. Cosmos, lxxii(7): 758-764. July, 1930.

This paper contains results of a research originally begun to determine whether calcium contents of roots and crowns of teeth vary in those which are affected by pyorrhea or caries.

The method of determination is given as well as detailed tables showing results for each tooth.

The following averages were found:

	Ca content in Mg per cent			
	Entire Tooth	Crown	Root	Difference between crown and root
sound teeth	28.46	31.55	25.37	+19.59
carious teeth	27.66	29.74	25.59	+13.95
pyorrhetic teeth	27.84	30.28	25.41	+16.08

—*W. Y.*

24—Kauschansky, L. J. (Leningrad): **Calcium und Kaliumniveau im Blut bei Kranken mit Alveolar-pyorrhoe.** The calcium and phosphorus equilibrium in the blood of patients with alveolar pyorrhea, in: Dtsch. Mschr. f. Zhkde., xxiii: 1496. 1930.

Summary of findings:

1. In alveolar pyorrhea the *calcium* content of the blood is increased.

2. The phosphorus content lies always within normal bounds.

25—Lebermann, Gertrud: **(Dissert.) Zur Gasstoffwechseluntersuchung von Paradentosekranken.** On gas metabolism in cases of paradentosis, in: Paradentium (6): 178-187. Z. Rundsch, 39(2). 1930. Abs. D. M. f. Z., xlix(7): 357. Apr., 1931.

The author's researches are based on the classification of the paradentoses by Loos. The gas metabolism was determined with the modified Benedict apparatus, basal metabolism and specific-dynamic protein action. In the basal metabolism series were found cases showing an elevation of +10% and decrease to —6% of the value reckoned as normal.

In the specific-dynamic protein action series isolated for examination, the basal metabolism reached an increase of 15-40% in the course of a three-hour study after a meal. Two cases examined were of endocrine genesis; in both cases there was a change in the gas metabolism. 3 cases with lowered basal metabolism are clinically mixed forms, standing near the group showing allergic-arthritic diathesis. 10 cases showed marginal inflammation, a prevailing condition of horizontal atrophy, also approaching the type of allergic-arthritic diatheses; two of these showed alterations in gas metabolism. Two cases of syndromic paradentoses, i. e., such as are accompanied by endocrine and metabolic disturbances, were also isolated. According to the grouping in the author's studies, it may be understood that in certain groups of genetically and clinically differentiated paradentoses, the endocrine anomaly, or the allergic-arthritic diathesis predominates in the etiology. Between these groups lie mixed forms in which functional activities are inseparably linked with hormonal influences, expressed through the vegetative nervous system. These pathophysiologic manifestations become clear only on clinical and genetic study of the two chief groups,—on one hand, inflammatory horizontal atrophy, and on the other, non-inflammatory vertical atrophy. The movement of the gaseous interchange takes place along parallel lines with these.

The small number of the author's isolated cases permits drawing of conclusions only when considered along with the cases described by Herz in his dissertation (Frankfort a/M 1930)*

**See Abs. Jour. of Period., p. 128 Vol. iii(2).*

26—Mellanby, Mrs. May (London): **Experimental gingivitis and pyorrhea,** in: Amer. Dent. Surgeon, 1(12): 516-519. Dec., 1930.

The conclusions reached in this paper are that periodontal disease can be produced and prevented under experimental conditions in dogs. Deficiencies of vitamins A and D in the diet are very important factors in the development of the soft and hard periodontal tissues. Vitamin A deficiency is largely responsible for the overgrowth and abnormality of the periodontal epithelium and the corium. Vitamin D deficiency is responsible for defects in the hard periodontal tissues (alveolar bone, lamina dura, etc.).

The developmental variations during the period of growth are of the utmost importance in resistance of the tissues to disease. A deficiency of vitamin A and D during early life is of much greater significance than the same deficiency after the periodontal tissues are developed. This may account for a condition often seen in man, namely, the presence of periodontal abnormalities in a mouth where there is little or no caries, a condition which would be explained by the consumption of a diet poor in fat-soluble vitamin A but rich in D during development

and eruption of the permanent teeth, but containing a liberal supply of both vitamins in later life.

Experiments are now in progress with the object of differentiating further between vitamins A and D in the etiology of the different forms of periodontal disease. The writer does not emphasize the part played by cereals but the evidence available suggests that they antagonize both vitamins A and D.

—*D. F. M.*

27—Mellanby, Mrs. May: **Periodontal disease in dogs.** (Experimental gingivitis and "pyorrhea"), in: Brit. Dent. Rec., l(10): 472-476. Oct., 1930. Dent. Surg. (Brit.), xxvii: 1353, 578-582.

Author has experimented with deficiencies of vitamins A and D as causes of periodontoclasia in dogs. Young dogs on deficient vitamin A show thickened and irregular gingival epithelium with thickened corium. Those on a diet deficient in vitamin D showed thickening of the pericementum, and hypocalcification of alveolar bone with formation of osteoid tissue. If the young animals had plenty of vitamins A and D, a deficiency later on in life had a much slighter effect. But if these vitamins are deficient in young animals a later sufficiency is not preventive of the development of periodontoclasia.

Deficiency of A and D from the time of weaning to seven years caused the mouth to be dirty, breath foul, gingival recession, many deep periodontal pockets filled with pus, much calculus and much bone absorption. Author concludes that pyorrhea may be caused or prevented at will in growing dogs by feeding them or depriving them of vitamins A. and D. Thirty dogs were used over a period of 8 years.

—*H. J. L.*

28—Mellanby, Mrs. May: **Experiments on dogs, rabbits and rats, and investigations on man, which indicate the power of certain food factors to prevent and control dental diseases,** in: J. Am. Dent. A., xvii: 1456-1480. Aug., 1930.

The practical solution of the problem of dental caries is to be sought in the establishment of resistance in dental tissues and in the body as a whole. A number of investigations are described which demonstrate that the minute structure of the developing tooth, and the reaction of the developed tooth and attaching tissues to caries and periodontal diseases, are influenced by the chemical nature of dietetic ingredients, which after being digested and absorbed are carried in the blood stream to the tissues of the body and thus to the dental structures. Perfect teeth and jaws may be produced and maintained in man by suitable diets both before and after eruption of the teeth. Experiments are described which seem to prove that certain foods calcify while others have an anti-calcifying effect on the teeth. Diet greatly influences the onset and progress of periodontal diseases.

—*M. M. B.*

29—Miller, Sydney R., M. D. (Baltimore, Md.): **Blood chemistry and its relation to periodontal problems,** in: J. Am. Dent. A., xvii(3): 458-467. Mar., 1930.

An extremely interesting and logically presented review of present knowledge of blood chemistry especially as it relates to calcium metabolism. No special application is made to periodontal problems.

—*H. J. L.*

30—Mueller, Emil, M. S., D. D. S., and Rony, H. R., M. D.: **Laboratory studies of an unusual case of resorption,** in: J. Am. Dent. A., xvii: 326-334. Feb., 1930.

Reported case is of an individual in which the teeth were being progressively lost as the result of cavities appearing in the root and rapidly extending so as to involve the whole diameter, the crown meanwhile remaining intact. The cavities apparently always started at a point apical to the base of gingival crevice and this location indicated absorption rather than caries. In addition bacterial smears were negative to bacillus acidophilus; and finally, histological slides of extracted teeth showed conclusively that process was an osteoclastic resorption.

Following Weinmann's suggestion of association of general physical disturbance with diffuse atrophy, a thorough physical examination was made, the findings being general neurasthenia, vaso-motor instability and hepatic functional disturbance of unknown origin. After six weeks of systemic treatment, consisting in a low protein, low caloric diet, mostly milk, vegetables and fruits; also

intramuscular injections of sterile, purified casein twice weekly there was apparent improvement in liver function, and teeth showed little or no further resorption.

Whether dental conditions and hepatic disorder were related etiologically or merely coincidental, cannot be determined by one case and no conclusions were drawn but because of rarity of condition authors suggest investigating into probability of hepatic disorder in any similar case encountered.

No like case seems to have been recorded in the literature, nor have Drs. Black, Potts or Gilmer met with any in their extensive experiences.

The illustrations are from X-rays taken periodically, and from photo-micrographs.

—*C. R.*

31—Mueller, Emil, D. D. S., M. S.: Histologic study of a case of extensive resorption in a human being, in: J. Am. Dent. A., xviii: 684-696. April, 1931.

Mueller reports additional findings in resorption case previously reported. It was determined that the rapid destruction of teeth in reported case was a true resorption, and a general physical examination was made, indicating a marked functional disorder of liver. The treatment was a low caloric diet consisting mainly of milk, vegetables and fruit, supplemented by intramuscular injections of purified sterile casein. Histologic specimens, as well as X-rays taken before treatment, showed extensive areas of resorption, which by comparison with similar X-rays made in January, March and May preceding, indicated that the destructive process was active and continuous during five or six months. (This damage was not, however, detectable on clinical examination.) On the other hand, X-rays taken after treatment commenced, indicated a slowing down of the osteoclastic process. In the present report additional photo-micrographs of teeth removed with contiguous structures at later periods, as well as successive X-rays confirm the previous findings; and the last specimen removed, in February, 1930, shows unmistakably that all resorption had ceased and that extensive repair was taking place on all surfaces. The repair material appears to be a cementum-like substance. At no place was there ankylosis, the peridental space being maintained throughout between tooth and alveolus. While admitting that the result may be mere coincidence since spontaneous arrest of tooth resorptions have been known to occur in other cases; still the author thinks that the present case belongs to the "diffuse atrophy" class in which "there is definite deviation in blood chemistry and a specific dynamic effect of protein from the normal" and suggests that this investigation indicates possibility of influencing such conditions through causal therapy.

—*C. R.*

32—Smith, Geoffry H.: Factors affecting the deposition of dental calculus, in: Australian J. of Dentistry, xxxiv: 305-11, 352-69. Sept. and Oct., 1930. Reprinted from Australian J. Exper. Biol. and Med. Sc., vii. 1930.

This represents original work done by the author which formed the thesis for the Degree of D. D. Sc. at the University of Melbourne. It had for its purpose an investigation of the cause and nature of the deposition of dental calculus and why it is that certain individuals are highly susceptible, while others, living under approximately the same conditions, are entirely free from such deposits. It was found that the fundamental factor in dental calculus formation is the precipitation from the saliva of calcium phosphate which is normally present in amounts sufficient to produce a supersaturated solution in water. In cases of serumal calculus the blood serum is also concerned. Investigations were undertaken to determine the validity of certain theories that had been propounded in explanation of calculus formation in the mouth such as the carbon dioxide theory, the physico-chemical theory, the role of organisms and lastly the effect of diet which was studied at considerable length.

These were all found to be of little importance in explaining the formation of dental calculus. The pH of saliva was not influenced by different diets, nor did it correspond with changes of urinary pH, the conclusion being that the pH of saliva does not vary sufficiently from the normal to exert any marked influences on calculus formation.

Investigations were next undertaken to determine the influence of enzyme action on the deposition of dental calculus. These showed conclusively that an enzyme called phosphatase is present in the epithelial cells desquamated from the surface of the gums and

oral mucous membrane and that it is capable of converting organic phosphate into inorganic form. This desquamation is a normal process but under conditions of disease such as gingivitis or other inflammatory reaction in the periodontal tissues, this phosphatase is increased in the saliva, thereby causing the deposition of calculus. His conclusions are that the phosphatase content of the saliva of different individuals depends largely upon the condition of the gums and oral mucus membranes and that the use of the tooth brush diminishes the amount of phosphatase in the saliva showing thereby the importance of brushing the gums as a prophylactic measure in calculus formation.

In a word, the author is of the opinion that diseases of the periodontal tissues are the *cause* rather than the *result* of tartar upon the teeth and that the best way to prevent its formation is to see to it that the periodontal tissues are maintained in health.

—*A. H. M.*

This paper follows up the work of Kenneth T. Adamson of the previous year and the work of both authors is an extension of that of Robinson.

—*H. A. R.*

33—Ssuchowolskaja, Dr. R. (Moskau): **Supravitale Eiterfärbung in der Klinik der odontogenen Erkrankungen.** Supravital pus staining in the clinic of diseases of dental origin, in: D. Monat. f. Z. (7). 1930.

This author has used the method of Seyderhelm,* which gives a clear picture of the character of the suppurative process. The more intensive the toxicity of the bacteria the larger will be the number of cells with injured cell-membranes, and the more energized the quantitative and qualitative cell-staining. The pus cells of a sterile exudate obtained when punctured, do not take the stain.

—*Transl. from article, H. A. R.*

*R. Seyderhelm uses a mixture of dyestuffs, both high colloids—Congo red and trypan blue.

34—Weinmann, Prof. Dr. Josef: **Stoffwechseluntersuchungen bei der diffusen Atrophie des Alveolar-fortsatzes.** Metabolic researches in diffuse atrophy of alveolar bone, in: Z. Stomat., xxviii(12): 1154-63. Dec., 1930.

As to the results of these researches Weinmann says that the diffuse atrophy of the alveolar process is one of those diseases in which an increase of Ca, cholesterin, bilirubin and blood sugar occurs, with a diminution in the specific-dynamic action of protein. He wishes to emphasize the fact that not all these percentages are increased in each case, and their etiologic significance is not yet entirely clear. Even the question whether these different findings correspond to different forms of these disease groups is today unanswered. As to the comparative values of cholesterin and Ca, there appears to exist a certain antagonism; in all but one of the cases studied, extraordinarily high cholesterin values occur with normal or slightly increased Ca values; while, conversely, the specially high Ca values are found accompanying normal cholesterin. An understanding of this variation which is of highest importance for therapeutic progress will only be made possible through further research.

—*Transl., H. A. R.*

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Supplementary 1928

35—Hulin, Prof. Dr. Ch.: **Nature et mode de formation des calculs salivaires.** Nature and mode of formation of salivary calculi, in: L'Odontologie, lxvi (4): 201-220 and (7): 472-486. 1928.

Salivary calculus seems to be formed by a colloidal reaction in which a precipitated albuminoid mass serves as a substratum into which calcium salts become incorporated by absorption. The alkaline salivary salts (alkaline phosphates) when they predominate in the saliva favor the flocculation of albumins. Since these salts do not always predominate albuminous gels form only at certain periods. Calcium comes largely from buccal mucus, from micro-organisms and from desquamated epithelium whence it is taken up by the phosphatic ions in the saliva and deposited by absorption as insoluble calcium phosphate in the gel previously deposited on the teeth, in time becoming saturated with carbonic acid to form the very insoluble carbonate complex.

—*H. J. L.*

(d)—Clinical Etiology

(Continued from July, 1931 issue, page 155)

1930

135—Back, Dr. Heinrich (Prague): **Untersuchungen ueber die Aetiologie der chronischen Alveolar-pyorrhöe und Versuch einer kausalen Therapie.** Researches on the etiology of chronic alveolar pyorrhea and trial of a new therapy, in: Z. Stomat., xxviii(11): 1087-1098. Nov., 1930.

The author regards pyorrhea alveolaris as essentially an inflammatory condition. Cases due to endocrine imbalance in which inflammation is not a factor are relatively few, according to capillaroscopic findings. Calculus appears to be a primary source of inflammation. Drugs applied locally have but little effect because they fail to penetrate the depths of the inflammation and have no effect on the tendency to calculus formation, which latter the author considers due to alkalosis. By increasing the blood calcium the author hopes to allay inflammation; and by increasing acid ions in the blood he hopes to decrease the tendency to calculus formation. Vitamin C he believes to be especially valuable for bone formation. As a means to this end he administers a preparation called Pyraltern which is a special mixture of Vitamin C with Kombucha, which has the property of forming gluconic acid from sugar (Hermann). The gluconic acid thus formed is not oxidized in the body but increases the number of acid ions and the calcium level of the blood. More lasting effects are thus obtained than by the direct administration of calcium gluconate. Cases treated over a period of months by this method show excellent results in reduction of inflammatory signs, tightening of teeth and freedom from calculus formation. The author notes the initial removal of subgingival calculus by instrumentation in the cases cited.

—*H. J. L.*

136—Boenheim, Felix, Dr. med.: **Ist das endokrine Drüsensystem bei Paradentose gestört?** Is disturbance of the endocrine glands present in paradentosis? in: Paradentium, ii(3): 91-96; Z. Rdsch., xxxix(27): 1930.

This article is a violent polemic against that of Dr. Nothmann. "The larger his experience," says the author, "the more persuaded is he that in paradentosis, disturbances in the endocrine glands are also present,"—for the clearing up of which further investigation is needed.

—*H. A. R.*

137—Broderick, F. W., L. D. S., M. R. C. S., L. R. C. P. (London): **Dental caries and pyorrhoea: another approach,** in: Dent. Mag. & Or. Top., xlvii: 353-67. Apr., 1930. Abs. Int'l J. Orthod., xvi(6): 674-5. June, 1930.

The theory of Broderick is that caries develops as a result of an acidosis, neutralization of which exerts a drain on the alkaline reserve. Pyorrhea on the other hand develops in the presence of hyper-alkalinity which is heralded by a deposit of salivary calculus about the roots of the teeth. Both affections are, therefore, diseases of metabolism. Dentistry still lingers in the bacteriologic stage of pathologic evolution, so that we are prone to seek a bacteriologic cause of the chronic infections. This is only one link in the chain, for bacteria can infect tissues already diseased and may incidentally set up vicious circles, as by further lowering of resistance. Caries brings about periapical infection, and the granuloma may be visualized as a defensive barrier against systemic infection rather than the source of the latter. Caries and periapical infection seem naturally related to rheumatic infections while there is an undoubted relationship between pyorrhea and gastric ulcer. The reaction of the saliva constitutes a better index of the general health than the state of the blood and urine. No purely local factor can be assigned as a cause of these infections and the endocrine system is readily seen to figure in their causation as well as in the state of metabolism.

—*Copy.*

138—Broderick, F. W.: **Summary of the Broderick articles on dental caries and pyorrhea,** in: Dental Mag. and Or. Top., xlvii(4): 355. April, 1930.

The following is an appreciation, probably editorial, of a series of articles by Broderick appearing in the Dental Magazine during 1929 and 1930.

"In the first article in the present series, Mr. Broderick was concerned to demonstrate that there is a great deal of evidence to show that "diseases" of the teeth are not dissimilar in origin to diseased conditions elsewhere in the body. In the next article he discussed salivary reaction and its effect on dental conditions; and in the third article he dealt with the widespread belief that some bodily state plays a part in the incidence of both caries and pyorrhea. In the fourth article he cleared up certain misapprehensions which would seem to militate against the acceptance of his hypothesis and went fully into the prevalent idea that there is a direct antagonism between caries and pyorrhea. In the fifth and sixth articles he dealt with the prevention of dental caries and pyorrhea; and in the seventh article in February he took us into the domain of psychological medicine, concentrating upon one aspect of the metabolic equation—the involuntary expenditure of energy.

"In the eighth and last article he deals with the relation between dental and general health. He suggests that his visualization of the causation of dental caries and pyorrhea opens up relations between dentistry and medicine of an entirely novel nature, more correctly explains recognized phenomena, and should help to elucidate a number of difficult problems in the realm of general medicine."

—*Copy.*

139—Broderick, F. W.: The importance of the differentiation of simple marginal gingivitis from commencing pyorrhea, in: Brit. Dent. J., li: 783-92. July, 1930.

Active caries and active pyorrhea are not found in the same mouth at any particular time; these two conditions are antagonistic. There exist two sources of error in the diagnosis, the first being what is meant by active caries and active pyorrhea, and the second, exactly what must be present in order to diagnose pyorrhea in its earliest stages. There is much uncertainty regarding the early stages of pyorrhea; what one will call commencing pyorrhea, another will consider as a simple marginal gingivitis; the former will give a bad prognosis—the latter will administer simple local treatment with every assurance of success. While pyorrhea must begin as marginal gingivitis, this does not mean that every case of marginal gingivitis will progress to destruction of alveolar bone, pocket formation, pus and ultimate loss of the tooth. There may exist a number of inflammations at the gum margins which have no relation to the symptom complex. The association of calculus with the progress of the disease depends upon the deposit in the depth of the pocket, not upon the gross collections readily seen. It is important to note the presence of microscopic calculus, which can be demonstrated in every case. This primary local factor, the subgingival tartar, the author believes the essential feature in causing the trouble. This does not imply, however, that the etiologic factor on which all symptoms depend is local. We must go a step back and consider the origin and method of deposition of this calculus. The deposition of lime salts is associated with the acid-base balance of the blood and the CO_2 content, which are intimately connected. Tartar, when deposited, may be a local cause of pyorrhea, nevertheless in its formation constitutional circumstances must be involved, therefore, pyorrhea must be the consequence of general and local conditions. Changes in the acid-base balance and CO_2 content of the blood is due to an increase in alkalinity related to a shortage of CO_2. The latter is an acid gas and if taken from the blood will tend to upset the acid-base balance causing an increase in alkalinity. Shortage of blood CO_2 creates a tendency to tartar deposition. The diagnostic points in differentiating between marginal gingivitis which are the beginning of pyorrhea and those which are not will be the variety of the tartar, the type of pocket and whether or not the gum tissue is destroyed to the same extent as the alveolar bone. In the advanced stage there will be no difficulty but in the earliest stages when a definite diagnosis is important for preventive measures the physical changes may be so slight that some difficulty may be experienced unless the biochemical factors concerned in the deposition of the tartar are in mind; the deposition is dependent upon an alkalosis, which will be reflected in the reaction of the saliva. This is a condition easily estimated and will give the clue whether the simple or more complicated problem is presented.

—*J. C. S.*

140—Butz, Hildegard (Leipzig): (Dissertation) **Beitrag zur Frage des Zusammenhanges zwischen Diabetes und Paradentose.** Contribution to the problem of the correlation between diabetes and paradentosis. 1930.

The author shows that her cases of paradentosis did not improve, although better in all general aspects during their sugar-free intervals. Among diabetics without paradentosis she found a pronounced tendency to furunculosis, etc. She therefore distrusts the general inflammatory tendency of diabetics as a cause of paradentosis.

In youthful diabetics she found no paradentoses. In comparing her figures with those of Wolff (950 paradentotics, insurance cases) she established the fact that according to Wolff's tables, a greater incidence was to be expected, as she was able to demonstrate among the diabetics in 67 cases. The investigations of Loos turned out otherwise; while Loos himself noted that out of 100 diabetics six were paradentotic, his pupil Dimitrowa demonstrated an incidence of 15 out of 16 diabetics.

—*Transl. H. A. R.*

141—Chiavaro, Prof. Angelo, D. D. S., M. D. (Genoa): **Etiology and definition of pararizoclasia,** in: Dent. Items of Int., lii(11): 847-858. Nov., 1930.

The author gives a list of many of the names proposed for this disease, and condemns the use of dental terms found to be etymologically incorrect. This is followed by a résumé of old and modern history of pararizoclasia, at the beginning of which he quotes Prinz's well-known summary of the theories on the etiology of pyorrhea published up to 1925. J. Marion Read's study of cultures from 47 cases (Endelman—Special Pathology, Dental; 1927; p. 339) furnishes a list of 16 micro-organisms in order of frequency. The author quotes himself (Elements of Dentistry, publ. in Rome, 1907) . . . "This disease, therefore obeys also the general laws of the infection of the tissues by the micro-organisms which act efficiently only upon tissues submitted to a diminution or a loss of their resistance power." In accordance with the foregoing etiology, the author submits a "short and simple definition": "Pararizoclasia is a distrophy of the surrounding tissues of the roots of the teeth followed by infection."

—*H. A. R.*

142—Freikina, Dr. S. G. (Moscow State University): **Ueber die sogenannte "Toxizität" der Leukocyten bei Periodontitiden und Kieferosteomyelitiden.** The so-called "toxicity" of the leucocytes in periodontitis and osteomyelitis of the jaws, in: D. M. f. Z., xlviii: 1222-1225. 1930.

After a historical review, the author describes his own fixation and staining methods as used in 21 cases of periodontitis: acute, suppurative, subacute, chronic, cysts, cold abscess of cheek.

The number of cases was too small to give decisive results; but in summation it may be said:

1. The presence of an inflammatory suppurative focus is almost always accompanied by the development of some specific alteration in the protoplasm of the neutrophiles ("Toxizität," cyanophilic substance).

2. In general, the forms collected from osteomyelitis give a toxicity of 4+.

3. Acute suppurative forms of periodontitis as also suppurative cysts are likewise accompanied by this symptom.

4. Acute non-suppurative, as well as chronic periodontitis, and cysts with serous contents show no toxicity.

—*Transl of author's summary.*
—*H. A. R.*

143—Giacosa (Turin, Italy): **La pyorrhée alvéolaire en rapport avec la pression masticatoire et l'articulation.** Pyorrhea alveolaris in relation to the masticatory pressure and articulation, in: Revue de Stomat., xxxii: 877. 1930.

In Giacosa's view there is an enormous proportion of cases of alveolar pyorrhea with faults of occlusion and articulation.

—*H. A. R.*

144—Göttlich, S. F. (Amsterdam): **Eine Uebersicht ueber die verschiedenen Auffassungen bezüglich Aetiologie der Alveolarpyorrhoe.** A survey of the different theories in regard to the etiology of pyorrhea, in: Tijdschr. Tandheelk., xxxvii: 522-29. 1930. (Dutch) Dent. Jour. no. 7: 1930 Abs. Fortschr. v(2). Z. Rdsch., xl(12): 533. Mar., 1931.

Blessing already in 1911, has described 350 theories regarding the causation of alveolar pyorrhea, a proof that no one of them is wholly satisfactory. The designation is un-

fortunate and should be laid aside, since the exudation of pus from the alveolus is one only, out of many symptoms. Even today there is no unity of opinion. In Germany there are three schools of thought, Berlin, Vienna and Oslo (Innsbruck) represented respectively by Weski, Gottlieb and Häupl-Lang.

The Vienna school consider a great part of the so-called pyorrhea cases as outside the realm of pathology, and to be referred to bad hygiene alone; the Berlin school will not exclude these groups of cases from the paradentoses; while Häupl-Lang enrolls all these forms among the marginal paradentitides, while they recognize the systemic causes as predisposing.

145—Gracey, Clayton H., D. D. S.: **The clinical significance of traumatic occlusion,** in: J. Am. Dent. A., xvii (11): 2009-2015. Nov., 1930.

The author quotes and reviews some of the work done by Fones, Box, Stillman and McCall.

He writes "as an etiologic factor, traumatic occlusion has been more or less definitely established in the pathology of three distinct groups of tissues: (1) in the periodontium, including the gingival tissues and mucosa, the pericemental membrane and alveolar bone; (2) in those tissues within the pulp chamber which nourish the tooth, "intradental" tissues, and (3) in the hard tissues, the enamel, dentin, and cementum."

Thus the paper is summed up under the three headings (1) dental caries (2) pulp involvement, and (3) diseases of the periodontium.

"The following conditions are very considerably influencing the incidence or prevalence of traumatic occlusion."

1. Mal-alignment of teeth, early loss of teeth especially molars, use of hard golds and porcelain, bridges with highly carved occlusal surfaces, cast clasps and other retaining devices, indifference of dental profession to incipient periodontal lesions.

"The toleration of traumatic occlusion by the dental tissues on the other hand is influenced by": 1. poor diets; 2. foods which do not require chewing; 3. lowered resistance due to lack of exercise.

—*C. S. K.*

146—Häupl, Dr. Karl (Oslo, Norway): **Gewebsveränderungen am Paradentium bei Brückenpfeilern.** Changes in paradental tissues surrounding abutment teeth, in: Danish Dent. Mag. no. 2. 1930. Zahnärztliche Rundschau, xl(8): 345. Feb., 1931.

Summary and conclusions of author:

The inflammatory changes in the paradental soft tissues surrounding the teeth used for abutments must partly at least be charged to the bridge construction; since inflammatory changes in the tissues investing the teeth unattached to the bridge are of lower grade. Through faulty preparation and incorrect anatomical adjustment of the abutments places are made for the retention of débris which excites inflammation. Even the paradental bone adjacent to the bridge supports was more atrophied than in the teeth not so used.

The thickening of the cementum on the abutment teeth—increasing toward the root apex must, for the most part, be referred to the increase of function caused by the application of the bridge. A hypertrophy of the peridental ligament can be demonstrated near that of the cementum. A place for the building of new cementum is made by the resorption of alveolar bone. Any change in the position of teeth fixed to the bridge did not come in question.

The increased mechanical functioning related to the insertion of the bridge caused the hypertrophy and the formation of a localized marrow in the interradicular bony septum of the molar. No sign whatever of an atrophy due to inactivity in the paradentium of the abutment teeth can be observed; which indicates that the teeth attached to the bridge have retained their mobility.

The pulps of teeth which have been fitted with gold crowns show either insignificant alterations or else changes due to circulatory disturbances arising from the polishing and setting of the gold crowns.

—*Transl. abs. from Z. Rdsch.*
—*H. A. R.*

147—Herz, Dr. Henri (Frankfurt a. M.): **Die arthritisch-allergische diathese als grundlage lines paradentose typs.** Arthritic allergic diathesis as base of one type of periodontitis, in: Paradentium (6) 170-178; Z. Rdsch., xxxix(2): 1930.

The author has attempted by a study of thirty-five cases classified on the basis of

local symptoms to correlate the periodontal types with systemic manifestations gained by the study of blood chemistry, cytology and anamnesis. He finds a definite relationship of six cases of generalized paradentosis of the vertical atrophy type, five were definitely in endocrine imbalance, one hypophyseal and four thyroid; of twenty-one cases of horizontal atrophy nineteen showed arthritic allergic manifestations. Nineteen of the horizontal atrophy cases were definitely referable to a primary chronic catarrhal gingivitis,—the other two probably so. In four cases of localized paradentosis, blood and endocrine findings were negative hence etiology was presumably exogenous. Cases of mixed vertical and horizontal atrophy symptoms showed also with some probability mixtures of endocrine and arthritic findings. The author believes that research should be directed to grouping paradentoses not alone on local periodontal types but on basis of whole clinical picture.

—*H. J. L.*

148—Hirschfeld, Isador, D. D. S.: **Food impaction,** in: J. Am. Dent. A., xvii: 1504-28. Aug., 1930.

The continuity of the arch; proper location of the contact points; the presence of the marginal ridge and groove; serve to prevent food impaction. These factors should be carefully checked up during the course of operative or restorative procedure as an important precautionary measure in preventive dentistry. The normally erupted third molar should be retained as its loss often leads to effects causing food impactions. No less than twenty different pathologic conditions resulting from food impactions have been clinically noted.

A noteworthy contribution of interest to all dentists and worthy of careful study from a practical point of view especially.

—*M. M. B.*

149—Horn, Erwin, M. D. (Ulm): **Studien über die einwirkung von kronenringen auf das Marginale parodontium.** The effect of crowns on marginal parodontium, in: Dtsch. Mschr. f. Zhkde, xlviii: 1383-1401. Nov. 1, 1930.

Like Greve, the present author has come to believe that complete abolition of the band crown, because of the danger of injury to the parodontium, is not justifiable. Häupl, also, after thorough investigation of the condition of the parodontium under bridges concludes that properly made band crowns whose margins pass over upon the roots with the slightest inclination only, remain without special effect upon the surrounding tissues.

Complete doing away with root bands cannot however, practically come in question since, in many cases, with respect to mechanostatics, the securing of the crowns with bands cannot be avoided. Besides, the band forms for the closely embraced portion of the root, a valuable protection against caries. Given the proper indications and careful work, the danger of harm to the parodontium is not greater than in bandless work.

—*Transl. H. A. R.*

150—Hruska —— (Milan): **Die Ueberlastung der Zähne.** (De la surcharge des dents.) Concerning the overloading of the teeth, in: Odontologie, lxviii: 783-796. Nov., 1930. Abs. Zahnä. Rdsch., xl(14): 631. Apr., 1931.

The anatomy and histology of the paradentium is very thoroughly described. The author follows Häupl and Lang and illustrates the results of traumatic occlusion by photo-micrographs from their works. In second portion of article correction of malocclusions by prosthetic means is discussed with numerous references to earlier articles of the author. No new ideas.

151—Jacobs, Hubert, M. D., F. R. C. S. E., D. G. O. (Dublin). F. C. S. A. (Melbourne): **Dental diseases in relation to pregnancy,** in: Australian J. of Dent., xxxiv(7): 229-37. July, 1930.

The author gives his opinion regarding the relationship between dental caries and pregnancy, points out that a slight degree of osteomalacia is developed in all pregnancies, and that this may account for a certain amount of decalcification and softening of certain bones, such as the pelvis, ribs and vertebrae, and that it is probably due to an endocrine disorder associated with lack of vitamine "D" in the food. This is explained by the additional supply of calcium salts required by the growing fetus.

To overcome this condition, he advocates

an increased intake of calcium through the diet. He also discusses gingivitis in relation to pregnancy, urging treatment when this condition occurs, and discusses at length the possibility of the infections about the teeth acting in a harmful way on the system during pregnancy. He urges the removal of the foci during this time, stating that pregnancy is not a contra indication.

—*D. E. Z.*

152—Hulin, Prof. Dr. Charles: **Importance de la dissociation et de l'équilbre ionique en biologie.** The importance of ionic dissociation and equilibrium in biology, in: L'Odontologie, lxviii: 535-53. Aug., 1930. Abs. Brit. Dent. J., li(23): 1290-91. Dec., 1930.

Dr. Hulin gives a clear dissertation on the hydrogen-ion concentration in the blood and the results of disturbance of the acid-base equilibrium. He used the potentiometric method for measurement of the pH, which is more precise and in which personal interpretation is eliminated, and which gives values of pH to the third decimal. These experiments were carried out on mixed salivas and pure salivas. The saliva was drawn off from behind the lower incisors by means of a neutral glass syringe adjusted to an electrode. To obtain pure saliva a fine canula on a syringe led directly into the electrode. Estimation was made immediately to avoid any modification due to loss of CO_2 or microbic action. The experiments were conducted upon saliva from patients apparently healthy, without any active gingival or dental lesions, and on saliva from subjects with active multiple caries but without gingival lesions (excepting tartar); saliva from patients with pyorrhea but no caries; saliva from patients suffering with grave conditions—suppuration, necrosis of the jaws, cancer, and grave febrile conditions. As a result it was found that in normal subjects the saliva is habitually acid, or at least this is of frequent occurrence. This is explained as the optimum of the action of salivary diastase, which is on the acid side of neutrality. Out of twelve mouths in which caries was rampant, one showed pH alkaline, five neutral and six acid pH. But the pH does not play any part in the evolution of caries, since there was as much alkalinity as acidity, and the conclusion to which Dr. Hulin comes is that the factor of the terrain is everything. The results of the experiments on pyorrhoeic saliva are also interesting; alkalinity of the saliva was almost constant, which proves, according to Dr. Hulin, that patients suffering from pyorrhea are in general also hepatics, the liver being the only organ which transforms carbamates into urea—carbamates of ammonium are derived from the ammonia resulting from the disintegration of proteins. The normal function of the liver is to render these innocuous by converting them into urea. Should the hepatic circulation be defective and this conversion for any reason not be effected, the ammoniac content of the blood increases and must be regulated by excretion by means of the saliva under the form of OH ions. Intestinal stasis may share in this disturbance, and an alkalosis results. These abrupt variations cause differences in molecular concentration, which influence the rhythm of precipitation and the phenomena of diffusion. The change in the pH upsets the unstable buccal equilibrium. In this respect there is a constant agreement between the urinary pH and that of the saliva; that of the saliva being always less acid (though always near) than that of the urine. Whilst the saliva of pyorrhoeic patients is uniformly alkaline, the foci of acute suppuration are always acid, the pH diminishing as it approaches the centre of the focus. But in chronic suppuration the pH increases and may become neutral. The acidity engendered by microbic action in the interstices of the teeth cannot in any way modify the pH of the saliva, which is the indicator of the alkaline reserve of the blood (buffer action). This also holds for the urine.

—*Copy.*

153—Jones, Martha R., PhD. with Larsen & Pritchard: **Dental disease in Hawaii,** in: Dent. Cosmos, lxxii(5-8): 439-50, 574-7, 685-99, 797-810. May-Aug., 1930.

A serial running through four numbers of the D. Cosmos dealing with a peculiar type of dental caries which the authors call "odontoclasia." Its significance to the literature of periodontology lies in a contrast made between the blood chemical conditions leading to odontoclasia and those leading to alveolar atrophy. According to the authors, alveolar atrophy of systemic origin occurs during periods of degenerative bone changes, (rickets and old age), and is associated with an increase, relative, or absolute, or both, in basic elements of the blood plasma. Caries,

on the other hand, occurs for the most part during periods of bone growth and is associated with a blood condition in which acid constituents of the plasma are relatively increased. Evidence indicates that the two processes are not active concomitantly though they may alternate in quick succession.

—*H. J. L.*

154—Leigh, R. W., B. A., D. D. S., M. A.: Dental morphology and pathology of prehistoric Guam, in: Jour. Dent. Res., x: 451-79. 1930.

This represents a report based on the examination of crania from Guam in the Bishop Museum at Honolulu.

That portion of the report dealing with periodontoclasia (page 469) states that it "is the pathologic process of highest incidence among these people"—all females over forty had one or more teeth involved, while 66% of all males over thirty-five showed well marked lesions as represented in the crania examined. The chief causes seem to have been betel-nut chewing, soft diet requiring little mastication, and a high susceptibility determined by hereditary, dietary, sedentary and climatic factors.

—*A. H. M.*

155—MacMillan, Hugh W., D. D. S., M. D.: The case against traumatic occlusion, in: J. Am. Dent. A., xvii(11): 1996-2003. Nov., 1930.

The author is convinced that traumatic occlusion is not a predominating factor in the etiology of pyorrhea alveolaris. He omits from the discussion the acute trauma received from biting on shot, or the soreness induced by overhigh fillings or the injury received by the movement of very loose teeth. He believes that the nervous mechanism between the tactile nerves in the pericementum and the motor nerves of the muscles of mastication is sufficiently coördinated to prevent harmful stress from being applied to any tooth in ordinary mastication. He has not observed the development of pyorrhea as a result of masticatory exercise on the abutment teeth of bridges or teeth which are in malocclusion. He emphasizes the fact that masticatory effort is unrelated to tic douloureux, sensitivity to heat and cold, formation of salivary calculus, erosion, approximal dental caries, pulp infection and calcific pulp deposits.

Since the doctrine of traumatic occlusion has become so widespread, there is no appreciable reduction in the ravages of pyorrhea alveolaris. Real harm is resulting from the neglect of functional use of the teeth as a means of combating disuse atrophy. Pyorrhea alveolaris has not been produced experimentally by traumatic occlusion. In published reports on traumatic occlusion, the evidence has not been impartially presented. The clinical practice of dis-occluding teeth neither prevents nor cures pyorrhea alveolaris.

—*H. J. L.*

156—MacMillan, Hugh W.: Unilateral versus bilateral balanced occlusion, in: J. Am. Dent. A., xvii(7): 1207-1221. July, 1930.

Dental science is founded for the most part on occlusion, which is the relation of the antagonizing teeth when the jaws are closed. Of far greater importance is the relation of the antagonizing teeth during the functional excursion of the mandible. "Centric occlusion" has been defined as the relation of the inclined planes when the jaws are closed in the position of rest. Thus, as far as function is concerned, centric occlusion is neutral occlusion. Centric occlusion occurs at the end of the masticatory excursion or when the work is finished.

"Eccentric occlusion" is defined as the relation of the inclined planes of the teeth when the jaws are closed in any of the excursive movements of the mandible. For want of a better term the author uses the term "functional relationship" to refer to the relative position assumed by the antagonizing teeth during the process of chewing actual food.

"Bilateral balanced occlusion" and "three point contact" occur neither in the lower animals nor in man during the process of forcing the teeth through the tough, resistant food. The statement, "the temporal and masseter muscles of *both* sides exert their power in the final biting and crushing movement" is incorrect.

Unilateral balance is the state of equilibrium produced by the muscles of mastication of the working side which enables each half of the lower jaw to function independently of the other half as far as any support from the teeth of the opposite side is concerned.

—*D. F. M.*

157—Marshall, John Albert, D. D. S.: **Osseous changes due to pressure trauma,** in: Proc. Soc. Exper. Biol. and Med., xxvii: 270-271. Jan., 1930. Abs. D. Cosmos, lxxiii: 672-3. June, 1930.

When a continuous pressure is maintained upon the bone in the alveolar process of the maxilla the resulting trauma is characterized by several histo-pathologic changes.

The manner of applying pressure is by means of bands cemented upon the crowns of the teeth. To these spring wire has been previously soldered, so that when the appliance is in place the tension may be decreased, increased or changed in direction merely by bending the spring wire. Such appliances have been in place on teeth of monkeys (Macacus rhesus) from one day to eight months, and the results have been so striking that this preliminary report seems appropriate.

When the crowns of teeth are separated distally their roots are forced nearer each other. This pressure produces areas of resorption in the alveolar process as well as on the periphery of the roots. Combined with this resorption is a great amount of fibroblastic activity. These changes commence apparently early in the experiment, as shown by the examination of the tissues from an animal on which the appliances had been in place only 24 hours.

In one case, where the greatest possible tension was applied in the effort to produce resorption, the alveolar process between the teeth was fractured.

The force used in producing this result as measured by Jolly balances was found to be one and three quarter pounds.

Approximating teeth were subjected to elongation tension and its opposite, a depression tension. This double pull stretched the supporting tissues to a great degree and the effect was one in which the bone at the alveolar crest, the overlying connective tissue and mucosa have been pulled or dragged out of their proper position and have followed the movement of the attached tooth.

At the apex of the tooth the space between it and the bone is filled normally with a few layers of peridental membrane. The tooth which was pulled gradually from its socket showed a different picture. In this case the amount of peridental membrane had increased to five or six times its usual thickness.

The apex of the tooth which was being forced through the end of the socket was deeply eroded.

—*Extract of abstract in Dental Cosmos.*

158—McCall, John O., A. B., D. D. S.: **Principles of traumatic occlusion,** in: J. Am. Dent. A., xvii: 609-616. Apr., 1930.

Stillman introduced the term "traumatic occlusion" about fifteen years ago to designate a condition which he had identified as being consistently associated with periodontal disease. It is generally accepted today that traumatic occlusion is the predominating factor in the etiology of a large percentage of the cases of suppurative periodontal disorders.

Traumatic occlusion is nothing more or less than functional occlusion plus. It is simply a normal stress, but a heavier stress than can be borne by the tissues around the tooth without inducing abnormal reactions.

If the first effects of traumatic occlusion are in the pericementum, and if gingival disturbance follows this first lesion, it seems logical to assume that correct treatment for the gingival lesion must be directed toward that agency which is responsible for the pericemental lesion.

Many patients having incipient periodontal disease are troubled with an excessive and rapid formation of salivary calculus rather generally throughout the mouth. When the occlusion is properly adjusted and other appropriate measures have been taken it has been an invariable experience that excessive calculus formation at once ceases.

The effect of traumatic occlusion is not always observed in its major manifestations in the pericementum and adjacent tissues. In a great number of cases the principal effects of traumatic occlusion are to be observed in the dental pulp. The relationship of traumatic occlusion to pulp disturbance may be established in the earlier stages, by the relief which is invariably afforded when occlusion stress is taken away from the affected tooth.

A somewhat rare phenomenon, but one which requires careful consideration in each case presented, is the occurrence of symptoms of tic douloureux in a case having an obvious traumatic occlusion. Traumatic oc-

clusion is a mechanical irritant, and because of the fact that the function of the teeth is so highly mechanical, we should expect mechanical irritants to have a profound influence on the health of the dental mechanism.

—*D. F. M.*

159—McDougall, J. M., D. D. S. (Auckland, N. Z.): **Some constitutional predisposing causes of dental caries and pyorrhea,** in: New Zealand Dent. J., xxvi(124): 96-106. 1930.

This author believes he has found an answer to such questions as: "Why should we find so many cases of a natural immunity to caries but a decided tendency to pyorrhea as though the two conditions were antagonistic to each other?"—in the works of Broderick which he discusses at length. He quotes: " . . . the etiological factors in the production of pyorrhea alveolaris lie in a tendency of alkalaemia, in the compensation of which, conditions will become favourable for the deposition of tartar around the necks in the subgingival trough. As a result of the irritation which this calculus will bring about, there will occur a marginal gingivitis that will predispose those tissues to infection by any micro-organisms that inhabit the mouth and the clinical condition is the normal result of this infection."

The first body function to be studied is that which stabilizes the reaction of the blood if pyorrhea is to be correlated with alkalemia. Changes in these reactions are not so simple as in dental caries. The author's visualization following that of Broderick satisfactorily explains (in his opinion) the age incidence of pyorrhea, its antagonism to caries, its chronicity and the difficulty of finding a specific organism; further it displaces the unsatisfactory theory of carbohydrate stagnation.

—*H. A. R.*

160—Melchior, Dr. (med.) Max.: **Verschiedene formen dentaler ostitis.** Different forms of dental osteitis, in: Ztschr. f. Stom., xxviii: 1119-32. Dec., 1930. Abs. Brit. Dent. J., lii (1): 156-157. Feb., 1931.

Melchior put forward the view in 1910 and later, that the disease is always connected with pre-existing teeth, and is brought about by a chronic periodontitis which has given rise to permanent pathologic conditions. In 1924 he described another form, "paradental osteitis" which is by no means unusual and which the dentist should be able to recognize. Another form is distinguished by abscess and fistula. Diagnosis difficult: disease often latent.

161—Mueller, Emil., M. S., D. D. S., and H. R. Rony, M. D.: **Laboratory studies of an unusual case of resorption,** in: J. Am. Dent. A., xvii (2): 326-334. 1930.

A study of a case in which rapid and extensive resorption of the roots of several permanent teeth progressed over a period of six months. Histologic and bacteriologic studies showed the condition to be true root resorption, not subgingival caries. Physical examination and case history showed normal conditions except for slight thyroid enlargement, exaggerated knee reflexes and marked dermographia. Wassermann, urine and blood tests negative, except for high icterus index and positive indirect Van den Bergh reaction. The direct Van den Bergh test was negative. A blood test a week later gave a similar result. As a further test of liver function, two sugar tolerance tests were given a week apart, one with levulose and one with glucose, with positive reaction. Tests of metabolic rate and of specific dynamic effect of protein were made with results within normal limits. Final diagnosis based on foregoing examinations was general neurasthenia, vasomotor instability and hepatic functional disturbance of unknown origin.

Systemic treatment consisting of low protein, low caloric diet, chiefly of milk, vegetables and fruits, was prescribed. Simultaneously a heteroprotein therapy was applied consisting of purified sterile casein, intermuscular injections being given twice weekly. After six weeks of treatment tests showed improvement of liver function and no increase in extension of absorption of the tooth roots. No conclusions are drawn except the need for systemic study of these rare cases when they appear.

—*H. J. L.*

162—Münzesheimer, Dr. Fritz (Berlin): **Die wissenschaftlichen Grundlagen der Entlastungsbehandlung der Paradentosen.** Scientific principles for the treatment of malocclusion in the paradentoses, in: Paradentium, ii (1 & 2): 29-31, in: Z. Rdsch., xxxix (1). 1930.

In the case of a paradentosis called out by, for example, a trismus of the masticatory musculature, this must not be regarded as the only endogenous factor; but, rather as a rule, the paradentosis and the nervous affection are sequelae of the same cause. In a previous lecture referred to in this article the author regarded the question as chiefly one of dynamics. In all prosthetic treatment of paradentosis patients, attention must be given to the direction and duration of the forces at work upon the reaction capacity of the tissues.

163—Nothmann, Dr. Martin (Breslau): **Paradentose und innere Sekretion.** Paradentosis and internal secretion, in: Paradentium, ii(2): 33-40, in: Z. Rundschau, xxxix(18). May, 1930.

The author's researches have satisfied him that the paradentoses have nothing to do with the disturbances of the internal secretions. His position is not based solely on the wide literature study which he reviews, but on careful and thorough clinical investigation of at least fifty cases. "While Boenheim insists that in all cases (of paradentosis) a determination of the basal metabolism and of the specific-dynamic reaction of protein should be made," Nothmann considers this procedure useless. Because in an overwhelming number of cases studied, the basal metabolism is increased, it still cannot be stated that endocrine disturbance is the cause.

In closing the discussion of his paper by Weski and others, Nothmann quotes the statement of Bornheim that "it is of importance to the dentists that in 80% of the cases of paradentosis, endocrine disturbance is a predisposing factor," and says that his own viewpoint differs from this in principle. His objective is to protect the science of endocrinology from the disrepute which may easily result if research workers in their search for the etiology of paradentosis follow the leading of the partisans of endocrine origin of all cases of paradentosis.

—*Transl. from art.*, *H. A. R.*

164—Noyes, Raymond, '31 (Undergraduate: **The relationships between changes in the acid-base equilibrium of the blood and pyorrhea alveolaris,** in: Penn Dent. J., xxxiii(1): 4-5, 535. Nov., 1930.

An attempt to relate the formation of dental calculus, gingivitis and pyorrhea with systemic alkalosis. The ideas advanced are theoretical and based on no direct experimental data. The blood is supposed to be supersaturated with calcium which is held in solution by carbon dioxide and colloids. Alkalosis may result from basic ash diet, or oxygen want, as in high altitudes or stuffy rooms. Gastric hyperacidity leads to periods at least of alkalosis. Starr (Amer. J. of Psychol. July, 1922), is quoted for the statement that emotional excitement increases alkalinity of saliva. All these factors tend to cause formation of dental calculus, which predisposes to gingivitis and pyorrhea.

—*H. J. L.*

165—Oliveira, Dr. Luiz Carlos de (Rio): **Pyorrhea alveolaris,** in: Brasil Odontolog., vi(9). 1930.

Three causes:

1. General condition.

2. Lymphatic diathesis, dyspepsia, calculus formation.

3. Senility. Excessive mineralization of the teeth and the bone.

166—Oliver, Oren A.: **Malocclusion as a factor in periodontal lesions,** in: J. Am. Dent. A., xvii(9): 1617-1625. Sept., 1930.

There are various causes of periodontal lesions, among which is malocclusion. Present-day knowledge of periodontia would not let us believe that malocclusion is responsible for all periodontal conditions, but it has been demonstrated that certain malocclusal conditions do produce periodontal lesions and that such cases cannot be successfully treated unless this condition is corrected.

In some cases, malocclusion may be only a contributing factor, or it may be the principle or primary etiological condition responsible for the pathologic disturbance. These malocclusal conditions, as far as etiology is concerned, act in different ways. One group throws a new stress on one or more of the teeth, producing traumatic occlusion, with resulting disturbances. In another group certain teeth are thrown out of function, and, owing to the lack of function, pathologic disturbances may occur plus the irritation of the soft tissue caused by one group of teeth coming in contact with the gingiva of the opposite group of teeth.

By the correction of malocclusion it has

been proved that the malposition of one or more teeth may be responsible for the disturbance in the supporting tissue. This is often observed in a maxillary central which occupies a position lingually from the mandibular incisor, causing a function different from that Nature intended.

Other types of malocclusion, which are the result of the extraction of permanent teeth, showed marked disturbances of the periodontal tissues. These cases are produced by disturbances which allow the teeth to drift into the spaces made vacant by the extraction. As a result of this drifting and tipping of the teeth on each side, improper stress is brought to bear on the malposed teeth, which affects the supporting structure.

—*D. F. M.*

167—Roy, Dr. Maurice (Paris): **Pyorrhea alveolaris: its nature, pathogeny and treatment,** in: D. Cosmos, lxxii: 390-99. Apr., 1930.

The initial lesion of pyorrhea is said to be a "premature senile resorption of the walls of the alveolus—due to a constitutional cause —related to an arthritic diathesis."

The only evidence given in support of these conclusions is that they are based on "observations over a long term of years." Statements such as these to be convincing need to be supported by evidence of a more substantial nature than that presented by the author. This does not say that they may not be true, but that they are not proved.

The disease is divided by the author into two stages: one, a period of activity in which are found pus pockets and accompanying complication; and the other a chronic or passive period without pus pockets, in which the gingival recession keeps pace with the alveolar resorption or has been brought about by treatment.

Etiology is said to be "very obscure." Treatment consists in "instituting a régime to combat the arthritic diathesis" but what that treatment should be is not revealed. Local treatment includes "brushing all accessible surfaces of the gums with a stiff brush"; "curetting of the pockets"; "destruction of pus pockets by inducing a contraction of the detached mucus membranes"; "treatment of static defects."

—*A. H. M.*

168—Stillman, Paul R., D. D. S.: **Occlusion,** in: J. Am. Dent. A., xvii(5): 811-817. May, 1930.

Dentists have become accustomed to the thought that a deranged occlusion is to be looked for when a mouth shows advanced periodontal disease. But there still is an evident lack of appreciation in our profession of the fact that occlusal disbalance may be present in many mouths which have not developed serious periodontal disorders, but in which there is, nevertheless, disturbance of the dental apparatus which may have considerable significance.

The first requirement of ideal dental function and one which is quite obvious, is that all of the teeth should be present, with the single exception of the third molars, and also that they should be in good alignment. The alignment of the teeth should be such that there is no excessive overbite of the anterior teeth, nor much overlapping of cusps in the posterior region, as will result in interference with either protrusive or lateral contact excursions of the mandible. Each tooth should have its correct anatomic form and this must provide for intercuspation with the occlusal antagonists of the opposite jaw.

As the individual goes through life, the functional demands on the teeth and on their periodontal tissues are gradually changed. These demands are paralleled by internal changes in the teeth, the pericementum and the alveolar bone. In the latter especially, there is a loss of resiliency and consequently a lessened tolerance to extreme occlusal strain.

As judged by conditions in the mouth, the body reaches full maturity and attains the height of its physical development at about the age of 30 years. After that age a very perceptible, but usually slow, retrogression ensues. It is at this period of life, in the mouths of most individuals, that disease begins to manifest itself, unless there has been attained a physiologic or a true functional balance of the teeth, either from natural wear or from correction of the tooth form by grinding to provide protection against lowered resistance.

—*D. F. M.*

169—Vincent, Dr. Réné: **Notions étiologiques nouvelles sur la pyorrhée alvéolo-dentaire.** New etiologic concepts of pyorrhea alveolaris, in: Revue de Stomat., xxxii: 65-76. 1930

The author regards pyorrhea as essentially a resorption of the alveolar crests, other phenomena being secondary. The causes of the bone resorption he classifies as (1) trophic, including endocrine imbalances as in tabes, myxedema, testicular and ovarian insufficiency and osteomalacia; (2) infectious, either as direct extension of gingivitis or through blood-borne bacteria, which latter source he believes to be very common; (3) predisposing local causes.

The mildly virulent bacteria in the infectious type destroy the bone by attacking its connective tissue which reacts with suppuration, after which the osseous structure is resorbed.

The author argues for the existence of a gingival tonsil as described by Retterer (July-August, 1924, Revue de Stomat.), a lymphoid tissue having a distinct emunctory function. He bases his theory on microscopic studies of biopsy specimens; autopsy specimens he regards as misleading. Clinically it is evidenced by the gingival reactions to lead, bismuth and mercury in poisoning by these metals.

Alveolar pyorrhea is of two types (1) alveolysis without and (2) alveolysis with secondary infection. Pus flow accompanies the second type, and both types have an endocrino-sympathetic basis. If the causes are external, the condition is curable, if internal, incurable.

Treatment is either by extraction or surgical eradication of pockets. The cause of endocrine imbalance must be discovered and combatted. Trophic causes may be combatted locally by massage and diathermy. External infection and predisposing causes must be eliminated. Autogenous vaccines are extremely useful, not only against the alveolar infection, but also the systemic source. The author makes his bacteriologic diagnoses and cultures from blood from the gingiva, from blood from the general blood stream, and from the urine, which he examines routinely. By this means the cause of many systemic conditions baffling to clinicians is discovered and a cure effected during the treatment of the gingivae.

—*H. J. L.*

170—Wayte, Walter A.: **Dental caries and pyorrhoea.** (Letter to the Editor), in: Dent. Mag. & Or. Top., xlvii(3): 280. 1930.

Author has been in practice about 28 years dealing with about every kind of pyorrhea. He is convinced that it is just a local manifestation of a constitutional disturbance, and says that he cannot recall a single case of pyorrhea in which a history of rheumatism in the family could not be obtained. He believes that pyorrhea is due to the irritation of the toxins produced by the micro-organisms of rheumatism; it is therefore not a cause of rheumatism but an effect. He also believes that every so-called antiseptic tooth paste or powder helps pyorrhea along. The effect of irritating globules of essential oils on the gums must tend to draw blood from the tooth periosteum and reduce its vitality. He suggests that the constant increase in the number of cases within 20 years is due to the boom of the so-called antiseptic tooth preparations.

* * *

Supplementary 1927-28-29

171—Naeslund, Carl (Stockholm): **Untersuchung betiefs ursachen und entstehung des zahnsteines.** Significance of salivary calculus in the development of pyorrhea, in: Korresp.-Bl. f. Z., li(8): Aug., 1927. Abs. Int. J. Orthod., xiii(11): 1003-1004. Nov., 1927.

The author announces new viewpoints on this relationship as a result of exhaustive histologic, bacteriologic and experimental studies on the formation of concrements in the mouth, and also on pyorrhea. Deposition of lime from saliva or pathologic exudates in preformed cavities including pockets around the teeth is not the only source of calculus for when these concretions form above the gum level they may also extend downwards below the gum, while various buccal micro-organisms like the leptothrix are known to have the power to form calculi—that is, they form colonies and lime salts are deposited on them. Salivary calculus then is not to be visualized as a dead foreign body but as something with vital growth and even ability to form toxic material. The calculus paves the way for micro-organisms to penetrate beneath the gums and causes both mechanical and toxic lesions in the surrounding tissues and as a result paradentitis is seen which is none other than a stage of alveolar pyorrhea. However, the factors

above cited are not the only ones to be considered although they represent, in the author's opinion, the essential cause, the others being only contributory factors. Although the author's paper is founded on original research he quotes from the writings of others, such as Fleischmann, Gottlieb, Brown, Goldberg, Head, and Roos as giving sanction to certain aspects of his views.

—*Copy.*

172—Saraval, Umberto (Venice): **Fehlerhafte Artikulation und darausfolgende Erkrankung des Parodontium. Malocclusioni dentali e conseuenti lesioni del paradenzio.** Dental malocclusion and consequent lesions of the paradentium, in: Stomatologia, xxv(4): 259-267. Apr., 1927. Abs. D. M. f. Z. xlv: 857-858. Sept., 1927. Fortschr. d. Zhkde, iv(2): 511. 1928.

Paradental disturbances often arise in consequence of traumatic occlusion, whose presence may be ascertained by the use of carbon or articulation paper; by taking the bite in wax or coating the tooth with soot and thus determining the state of the occlusion. These faults of occlusion appear oftenest on the upper and lower anterior incisors and the patient is obliged to use his front teeth entirely in mastication. Bad habits also as nail biting or lip sucking lead to the same result. The cause is an overstress ("traumatic occlusion") exerted partly vertically, partly in a horizontal direction. The result is usually inflammatory paradentitis or paradentosis. Macro-and microscopically the bone is affected as well as the soft tissue. The causes are general (age, arthritic tendencies, circulatory disturbances, hepatic or renal diseases, endocrine imbalances, etc.), or local (tartar, endogenous or exogenous gingival irritation, different forms of gingivitis, stomatitis, etc., and injuries to the periodontium). Results will follow treatment only when the causes are fully understood.

—*H. A. R.*

173—Béliard, Dr. (Paris): **Résultats éloignés du traitement d'une forme sévere d' alvé olyse par la méthode de stabilisation prothétique,** in: Revue de Stomat., xxx: 284-88. May, 1929.

Showed a case of pyorrhea unusually severe in a young girl of 22 who had been treated for several years with no regression of the malady. Now for three years she has worn a prosthetic appliance, stabilizing the teeth from the second right to the second left premolar. The teeth thus stabilized and the alveolar processes are in perfect condition; but the remaining molars show alveolar resorption and abnormal mobility, as well as inflammatory phenomena, viz: gingival tissue proliferation, marginal suppuration, and painful reaction to heat.

This case is a clinical proof of the determining rôle of mastication in alveolar resorption by causing physiologic resorption. The factors favoring development of pyorrhea are not enough to produce alveolysis or periodontoclasia. The (intermittent) pressure which the tooth makes upon the walls of its bony socket is a necessary adjunct to these in order to cause progressive resorption.

174—Dimitrowa, M. (Sofia, Turkey): **Paradentose und Diabetes.** Paradentosis and diabetes, in: Dtsch. med. Wchnschr, lv: 313-15. Feb., 1929.

Diabetes clinically occupies us not only with sugar excretion and its results but with all the organs; but of special importance to us are the disturbances of the dental apparatus in diabetes, or the problem of the relation between the two diseases. After the usual review of the German literature, the author discusses the 16 clinical diabetic cases in which she found without exception pronounced paradentotic affections and she describes one of these cases at length.

In many of the cases the gums were reddened with inflammation; in others morphological changes were visible, expressed as pocket formation and gingival recession to all degrees. The author believes herself to have shown by a review of the literature and by the findings in the cases personally studied that the correlation between diabetes and periodontoclasia is an actual fact. It may be demonstrated that in almost all diabetics with hyperglycemia, a hypercholesterinemia goes hand in hand. She concludes that cholesterin has a determining effect on the development and course of paradentosis occurring in diabetes. It has been observed that with the improvement and cure of the diabetic condition the hypercholesterinemia also shows a falling curve; and likewise that as soon as the specific systemic treatment was begun,

the paradentosis tended to amelioration. Thus, in the opinion of the author, the paradentosis of diabetics is conditioned upon the hypercholesterinemia, and the cholesterin content in the tissues.

The study of paradentosis is now the study of systemic and constitutional conditions, experimental chemistry, physiology, and pathology.

—*Transl. from article. H. A. R.*

(e)—Symptomatology and Diagnosis

(Continued from July, 1931 issue, page 179)

1930

76—Arlotta, Prof. A. (Milan): **Elephantiasis gingivae,** in: La Rev. de Stomat., xxxii: 514-18. June, 1930. Abs. and Transl. D. Record, 1: 483. 1930.

The case is that of a boy of nine. There was nothing significant in the family history. Both parents were living and well and the Wassermann reaction of all of the members of the family was negative. He was born at full term, breast fed and at the age of six months had a febrile illness for a month the nature of which is not exactly known but which was suspected to be of cerebral character. Two lower central deciduous incisors erupted normally but then no further eruption took place and a progressive swelling of the gums next appeared covering the teeth and attaining considerable size. The father says that from time to time deciduous teeth appeared on this mass and became eliminated. The author has one of these.

The boy developed otherwise in a normal manner both bodily and mentally and examination by a competent pediatrist revealed no abnormality. In the mouth, instead of two normal dental arches there were two fleshy pink masses of an elastic hardness, flattened at their surfaces of contact. They were very evident when the mouth was open and when it was closed caused deformity of the face, the lips and cheeks being very prominent. The tips of the lower canines alone protruded above the mass. At the level of the left lower molars and premolars there was a large cyst in the mandible, which after radiographic examination was diagnosed as a follicular cyst. The bone around it was so thin that a fracture of the mandible was feared. Another cyst of smaller size was present on the right side. Radiographic films of the two jaws showed the presence of all the permanent teeth, normally calcified but of irregular arrangement. Several deciduous teeth were also present with their roots normally absorbed. A large piece of the gingival tissue was taken for section and was found to be of a clearly fibromatous nature with normal epithelial covering. The two cysts were operated upon by Partsch' method and pluriglandular therapy was tried without any effect upon the gums. Not wishing to remove the follicles of the permanent teeth and produce a lasting deformity, the author proceeded to remove a portion of the fibromatous mass, preserving the teeth, but otherwise removing it as completely as possible under local anesthesia followed by cauterization. The excellent result of the operation after one month encouraged the author to remove the rest of the mass in five sections subsequently. Some of the deciduous teeth were extracted after this. In all, forty grammes of tissue were removed, much of it of cartilaginous hardness. The post-operative condition was excellent. The last section was removed in June, 1929 and four months later there was no recurrence. The boy's appearance is immensely improved and he can now masticate, which was almost impossible before. While treating this patient, his only sister, aged three, was observed. Also breast fed, at six months her two lower central incisors erupted, but were not followed by any other teeth. Hypertrophy of the gingival tissue then occurred but did not reach the same proportions as in the case of the brother. She presented no other abnormality. In her case the gum was removed over the adjoining teeth in the hope of preventing the development of the deformity. This has apparently been successful, but further progress will be watched.

—*Copy.*

77—Babbitt, J. A. and T. Fitz-Hugh: **Agranulocytic angina,** in: Archiv. Otolaryng., xii: 439. Oct., 1930. Abs. J. A. M. A., xcvi(1): 69. Jan., 1931.

Case report: Patient age 26. When first seen leucocyte count down to 600, polymorphonuclears totally absent. Involvement of alveolar margins above and below noted, filled with massive necrotic sloughs, at first increasing with treatment but later showing an encouraging response.

78—Blass, J. L., D. D. S.: Gingival inflammation associated with purpura hemorrhagica, in: Bull. 1st Dst. D. Soc. (N. Y. C.) (second series), x(8): 304-5. Aug., 1930.

Report of case.

79—Calman, Arthur S., M. D.: Oral complications during pregnancy. Abs. D. Outlook, xvii(2): 49. Feb., 1930.

The author points out in his paper, that pregnancy will aggravate any diseased condition from which patient may suffer prior to or during her gravid state. The removal of infected foci and dental hygiene will prove of direct benefit to the patient, during the course of pregnancy. The so-called "pregnancy tumors" usually appear during the fourth month and disappear about two months after delivery. These growths are not inflammatory in character, but are in the nature of a true hyperplasia of the epithelial tissue and are probably caused by some internal secretory phase of pregnancy. The gums are markedly hyperaemic and are vulnerable to bacterial invasion and if a super-imposed infection takes place, there results a secondary gingivitis.

As to caries of the teeth, the author states that it is frequently noticed even among the better class of patients who look after their teeth normally, and while most observers do not believe that pregnancy per se initiates caries, nevertheless, if there already exists an early involvement of the teeth, the process will make still further inroads. Other afflictions listed are pyorrhea, ptyalism and the "toothache of pregnancy." A rare condition one meets is an "abscess of the parotid gland."

He is of the opinion that a number of investigators have traced cases of puerperal sepsis to such foci of infection as, infected teeth and pyorrheal involvement. Such complications of pregnancy as abortions, eclampsia and phlebitis, whose etiology are at present unknown, may eventually be attributed to foci of infection, the mouth playing an important role as such.

The author contends that "pregnancy tumors" are best left alone unless they annoy the patient or interfere with proper mastication. They should be removed surgically and the bleeding raw surface cauterized.

He warns against the use of medicinal supplies of calcium salts, etc., feeling that it is better to get these substances from the properly balanced diet.

—*D. E. Z.*

80—Campbell, J. Menzies, D. D. S., L. D. S., F. Q. S. E.: Pyorrhea Alveolaris— (Letter to Editor), in: J. Am. Dent. A., xviii(11): 2152. Nov., 1930.

Pyorrhea is a local symptom of a general toxemia usually caused by continued dietetic errors. Those suffering from inflamed gums, foul breath and other symptoms of faulty diet have received benefit by following a natural diet, taking appropriate exercise and certain dental treatment. Only when treatments have failed should pyorrheic teeth be extracted for too many teeth are being sacrificed.

History reveals that with the advent of prosperity and luxurious living ancient peoples suffered from pyorrhea, and that the peasants who followed a simple diet were free from this scourge.

81—Chatelier, J. and L. Kutner: Quelques mots sur un cas d'alvéolyse localisée. Notes on a case of localized alveolysis, in: Revue de Stom. Aug., 1930, 681-83, 709.

Case report: Sapper, 22 years, presenting a mouth in perfect state, without a trace of tartar, without infection; no pain, no caries; but with copious suppuration at the neck of the left upper lateral incisor, which is very loose and in linguo-version. The free border of the gum red and tumefied as well as the interdental papillae.

Diagnosis made was a defensive condensing osteitis. Radiography showed complete disappearance of the alveolar process on remainder of the root. In looking for the cause of the alveolysis, a traumatic occlusion was found. The crown of the lateral incisor being in linguo-version, the vestibular third of the crown came into complete occlusion with the lingual faces of the lower lateral incisor and canine. An albuminuria was also noted following scarlet fever, but no definite opinion is expressed as to its connection with the case.

This case was reported because it is a demonstration of the influence of traumatism in alveolysis, of the predisposing influence of the soil, so to speak, and also of the resistance of the individual vasculo-nervous system to traumatism and to infection.

—*Transl. from art., H. A. R.*

82—D'Alise, Dr. Corrado (Naples): A new clinical sign of rickets and missing tooth germs, in: Int'l J. Orthod., xvi(8): 851-855. Aug., 1930.

"A clinical sign that has for several years attracted my attention," says Prof. D'Alise, is that in many children after the complete eruption of the inferior permanent incisors and more often in the central ones, we note a marked retraction of the labial gum followed by a corresponding destruction of the socket border. To the author it seems certain that the labial gum retraction and consequent atrophy of the alveolar border of the permanent inferior incisors are expressions of rickets; and these recall to him another dental manifestation which is also a sign of rickets—the absence or lack of calcification of the permanent dental germs. He describes the gingivitis of pregnancy: "In fact, in many women of today, we notice that during pregnancy and lactation, they are affected with dental disease (caries, loosening of the teeth in their sockets, pyorrhea, etc.) which cease with the termination of the pregnancy and lactation to begin afresh with another pregnancy and lactation. From which arises the common saying, 'For every child a tooth,' etc. In the child of present generation, we note an impressive frequency of caries of first permanent molar which is the tooth that calcifies just at that time."

Thus the author concludes:

(1) that the destruction of the germ and corresponding labial alveolar border which is found in the inferior central permanent incisors at their eruption and sometimes, many years after, must be considered as a sign of rickets;

(2) that osteomalacia of the mother produces rickets in the child;

(3) that osteomalacia and rickets have their most important cause in improper alimentation as regards quantity, quality and proper preparation.

—*H. A. R.*

83—Fairchild, J. S.: Pyorrhea. A New Zealand dentist's experience, in: Dent. Mag. & Or. Top., xlvii(6): 943-944. Sept., 1930.

Dental troubles are constantly increasing; and until the causes are found and removed no headway can be made.

Author describes case of patient 5 months pregnant with acute pyorrhea. Raubitschek's operation was suggested by the medical man, but the dentist refused on account of the danger to both mother and child. The fetus was evidently removing all calcium from the mother who was in a scorbutic condition. An alkali forming diet was suggested and in less than a month all symptoms had disappeared. The child, now 5 years old, has splendid teeth. The mother has had only one tooth filled in six years and no signs of pyorrhea. In her second pregnancy there was no sign of pus; the gums were slightly deeper in color, and the teeth only loosened. He cites also the cases of two children, 18 and 12 years. When the first was born the mother was poorly nourished, and her elder child has a typically narrow arch with crowded teeth in eight of which small fillings have been required. After this child was weaned the mother adopted a diet of milk, eggs, vegetables and fruit for the baby and herself as well. As a result, the second child has a well-shaped arch and almost perfect teeth without a sign of decay.

The author is convinced that pyorrhea is not a disease, but simply an abnormal condition and cannot be contracted by a healthy person either on contact or inoculation. Removal of teeth except in extreme cases, he believes entirely unjustified.

—*H. A. R.*

84—Godsoe, W. H., D. D. S., B. Sc.: Some unusual cases at the infirmary of the dental faculty of the University of Toronto, in: J. Dent. Research, x: 123. 1930.

A report is made of five children ages nine to fourteen in which the teeth loosened and fell out. Three were members of one family in which there was a history of a similar condition on the father's side extending back three generations. The fifth case, a child of nine showed loss of eight permanent teeth and marked alveolar resorption. Blood examination in this case showed a distinct leucocytosis. Two months treatment in the hospital did not improve the case though a blood examination at the end of that period showed a reduction in the white cells from 10.200 to 4.833.

All cases reported showed that the condition had been present from an early age and that each patient except for the dental abnormality appeared to be healthy, both physically and mentally. With loss of the

teeth the gums assumed a healthy condition.

—*A. H. M.*

85—Gross, Dr. Hermann (Lab. of Dr. Weski, Berlin): **Zur Genese der vertieften Zahnfleischtasche,** in: Z. Rdschau., xxxix(27): Paradentium, ii(3): 70-86. 1930.

On the basis of human preparations studied by the author, he has reached the conclusion that the epithelium rests with its basal side on cementum and connective tissue as a continuous overlay; and that the deepening of the pocket results as a rule from intra-epithelial gaps and surface formation.

In the discussion following the paper, the author says in reply to a discussor that the formation of the intra-epithelial cleft is not always the result of chronic inflammation of the paradentium; but that the deepening of the pocket calls forth an inflammatory reaction on its own part.

This article is accompanied with many illustrations which need to be seen in connection with the text.

The most interesting point of this article is the author's conception of the epithelial relations involved in the deepening of the pocket. According to Gross the epithelium with its continuous basal layer overlies the tooth (cement) as well as the paradental connective tissue; just as the inner and outer epithelium of the enamel organ which also likewise consists of a continuous basal layer. This conception differs widely from that of the Gottlieb School.

86—Guimaraes, Ancilio.: **Ueber Alveolarpyorrhoë,** in: Brasil odontologica, July, 1930.

"A very complicated discussion of alveolar pyorrhea, especially upon a symptomatic basis."

87—Held, Dr. Arthur (Geneva): Review of Weski's article: **La paradentose et sa systématique clinique,** in: Revue odont., li(2): 547-554. 1930-1931. (Swiss Congress of Odontology.)

Weski, says the reviewer, reunites all the tissues originating from the dental follicle, the conjoint envelope of the tooth germ, (not an embryological unity) into a functional entity, whose function is to support the teeth. It consists of the cementum, the periodontium, the alveolus, the gingival margin. The "epithelial" papillary portion of Siegmund, the "enamel-dentin" of Weski, and the "paradentium" of Loos constitute an individual entity.

Paradentosis may be defined as a progressive atrophy of the paradentium.

Two forms:

1. total atrophic paradentosis (bone and soft parts)
   a. atrophia precox; b. atrophia senilis (senile atrophy)
2. partial atrophic paradentosis.

There are three factors concerned in the development of these forms:

1. local anatomic condition
2. local functional condition (articulation)
3. clinical picture and general condition.

These form the author's "Diagnostic Triad."

In order to render treatment effective it must naturally be directed to each of the factors: Thus we have a Therapeutic Triad":—

1. local therapy
2. correction and regulation of occlusion
3. internal medication

The late changes are the same for all the forms of partial atrophic paradentosis. Increased loosening, displacement, circular sulci; periodontal dystrophy, (in America called periodontoclasia); deep paradentitis (of Häupl-Lang); intra-alveolar pockets; paradental abscess.

—*Transl. H. A. R.*

88—Keilty, Robert A., M. D.: **Gingivitis: An infectious entity, from the medical and dental aspects,** in: J. Am. Dent. A., xvii: 271-281. Feb., 1930.

More than 90% of the population are sufferers from this disease. The oral problem as a whole is a coöperative one for the general dentist, the dental diagnostician and oral surgeon, the internist, the roentgenologist and the laboratory. Many of the objectionable breath odors are due to the gaseous production of gas forming cocci in gingival pockets. All forms of inflammatory changes in the gums are primarily infectious in character. Smoking and chewing tobacco play no part whatsoever except to stain the tartar.

The presence of tartar and calculus about the teeth is a result of the presence of gingival exudate and not primarily a cause of gingivitis. The general practice of scaling as the sole effort at eradication of progressive gingivitis is useless. The use of dentifrices of all sorts is doing little in the actual eradication of the disease. The infectious elements should be given prime importance. Treatment consists in forcing drugs such as hydrogen peroxide, sodium bicarbonate, Dakin's solution, etc., into the depths of the pockets.

—*M. M. B.*

89—Keilty, Robert A.: **The role of infection in gingivitis,** in: Proc. Path. Soc. Phila., 1931; n. s., xxx (meeting of Oct. 9, 1930).

"I would emphasize the fact that bacterial infection and protozoal infestation play a most important part in the initiation and progression of gingival changes. These gingival changes are of real importance, since they lead to much suffering and occasionally to death in the acute phases and to the unnecessary loss of teeth in the chronic phases. The gingivae are a possible focus of infection; this point is almost completely neglected by physicians. It has been shown experimentally by Cook that elective localization by streptococci from the gingivae is important.

"The bacteriologic problem is complex and many organisms commonly present have never been obtained in pure cultures. This offers a prolific field for the bacteriologist, but conclusions must be controlled by intelligent dental conditions. The problem as a whole belongs to the dentist and I have found that when a coöperative spirit exists, results have been obtained by treatment that could not be gained by any other method or means so far advanced. The results of treatment based on these conceptions have been a great aid in evaluating the importance of the role of infection in gingivitis.

"The infectious organisms present in the gingival sulci about the necks of teeth are a most, if not the most important single factor in the etiology of inflammatory conditions from acute to chronic phases, which we have classified under the inclusive term of gingivitis."

—*Copy. Extracts.*

90—Mileff, S.: **Localisations au periodonte d' un état septicémique déterminé par la coqueluche chez deux enfants.** Septicaemic periodontal localization determined by an attack of whooping cough in two children, in: La Semaine dentaire, p. 1403. Dec., 1930. Abs. Brit. Dent. Jnl., lii(4): 157. Feb., 1931.

Dr. Mileff reports an interesting case of loss of a temporary canine and molar attacked by periodontitis during an attack of whooping cough in twins aged three. These teeth showed no signs of caries. The temperature was raised and fell again the day after the removal of the teeth. This is very interesting as it is a local manifestation of a general infectious condition; and as there were no signs of caries, the infection must have been brought by way of the circulation. Dr. Mileff suggests that this may also account for a similar condition in certain cases of pulpless teeth, the roots of which have been filled; the infection brought by way of the blood stream, and the teeth being pulpless offer little resistance. This condition cannot always be attributed to faulty technique.

—*Copy.*

91—Miller, I. S., D. D. S.: **Complete resorption of the root of a permanent vital tooth apparently caused by excessive occlusal stress,** in: Dent. Items of Int., lii(10): 782-785. Oct., 1930.

Report of case.

92—Mori, Dr. Roberto: **Le eventuali emorragie del tessuto gengivale sia in condizioni normali, sia in speciali stati patolozici di esso.** Incidental (eventuelle) hemorrhages of the gingival tissues under normal or special pathologic conditions, in: La Cultura Stomat., p. 3-11. 1930(1). Abs. Z. Stomat., xxviii(7): 667. July, 1930.

The motive of this article is to simplify the differential diagnosis for the practitioner in cases of gingival hemorrhage, dependent on general systemic disease, and often on histologic changes in the gingiva itself. It seems to the author most important to the dentist to note the histologic changes as they are expressed through the gingival capillaries. *Mori* was able to demonstrate intra-epithelial capillaries (which, up to now have rarely been found in other mucosae, never in the gingiva). These, together with the sub-epithelial capillary network, he believes cap-

able of producing prolonged and stubborn bleeding in epithelial lesions or quite insignificant traumas of the gingivae.

—*Transl. H. A. R.*

93—Mummery, C. F., L. D. S., R. C. S. (Edinburgh): **A case of advanced pyorrhea in a boy,** in: Brit. Dent. J., li(4): 410-411. 1930.

Patient, a Chinese schoolboy, aged 16, suffering from remarkably advanced pyorrhea apparently of some years' standing.

On examination it was found that most of the anterior alveolus had been absorbed and that the anterior teeth in both upper and lower jaws from second premolar right to same premolar left inclusive were almost entirely denuded of support of either bony or fleshy tissue. Upper left central missing; also upper right first premolar. In lower jaw both central incisors and left lateral missing. The boy states that these fell out. Very little free pus or inflammatory condition of any kind and only very shallow pockets. Posterior teeth, i. e., first and second molars both upper and lower, as yet uninfected.

A tooth was sent to the Institute of Medical Research for a report on the organisms present. Bacteriological report follows:

Direct film—Spirochetes (coarse and with irregular spirals). Fusiform bacilli predominant. Gram-positive cocci. Short Gram-positive bacilli. Diphtheroids in small numbers.

Cultures—Staphylococci. Diphtheroids and short-chained streptococci relatively scanty.

From a general point of view the boy was quite average—no history of rickets or any disease. His schoolmaster reported average mentality and average proficiency in games.

—*Shortened Copy of Article.*

94—Parkinson, Chester B.: **The importance of diagnosis in pyorrhea,** in: Pac. Dent. Gaz., xxxviii(11): 723-4. Nov., 1930.

Too much time is spent in various methods of elimination, according to this author without recognizing the importance of thorough and careful diagnosis. According to Stillman and McCall, diagnosis implies more than the recognition of the pathological condition; for it implies as well the determination of the etiological factors involved.

Mouth findings should be carefully recorded.

1. Pocket measurements; 2. relative looseness; 3. color and tone of gums, their recession or hypertrophy; 4. irregularities of bite and of individual teeth; 5. Bacterial findings; 6. missing teeth; 7. notation of teeth to be used as abutments; 8. amount and character of deposits; 9. general health.

Parkinson cites work of Box and describes (and uses) his set of probes for determining pocket depth. The importance of traumatic occlusion is emphasized. Parkinson does not regard salivary deposits as important and cites Black to the effect that serum deposits are results of pyorrhea and not the cause. The amount of bone destruction and the stability of the teeth are of most importance. Involvement of the bone between the roots should indicate extraction. Coöperation between the physician and dentist is advised because of the frequency of systemic complications.

—*H. A. R.*

95—Philippsthal, Dr. (Berlin-Biesdorf): **"Ueber einen Fall von Freundkörpergingivitis."** Foreign Body Gingivitis, in: Med. Klinik., xxvi: 1634. Oct., 1930.

Diseases of the dental mucous membrane, roughly treated, belong to the boundary between dentistry and medicine. In affections of the mucous membrane following a modern lead, we search too far after systemic disease as the etiological factor. Even dentists of the widest experience fall into this error. On this account the author thinks the following case report significant.

Man of 43 years. Gingiva bluish in color, bleeding easily; salivary calculus present, offensive odor from mouth, in spite of the best oral hygiene. Physicians and dentists called into consultation diagnose paradentosis: general health of patient firmly established; they find no etiological factor other than cigarette smoking, which they forbid. After removal of calculus, the mucosa is treated with zinc solution, painted with other medicaments; cleansed with a spray. The treatment is absolutely without result. The foetor increases, endangering the patient's employment. By chance a small fistula is discovered above the first upper left premolar. The Roentgen picture shows the retention of a root-point.

From the anamnesis, until now too casually considered, it is gathered that, eight years earlier, patient had a tooth extracted in the Univ. Dent. Clin. at Heidelberg. The prosthesis fitted well and the wearer suffered no inconvenience further than a slight sensation of pressure above the artificial tooth.

The remnant of tooth root was now extracted. The mucous membrane beneath the crown was ploughed up and bled copiously.

All symptoms promptly receded; the livid discoloration of the mucous membrane ordinarily due to venous stasis vanished, the bad odor disappeared; and the patient so often treated without result, is entirely cured.

The case teaches that an affection of the dental mucous membrane may be due to tooth remnants which act as foreign bodies. Further, this form of gingivitis will be cured by removal of the offending bodies.

—Transl., H. A. R.

96—Scholl, Dr. Hermann (Breisach): **Ueber das Verhaiten der Zahnfleischkapillaren bei Sulfidsaumbildung.** A study of the gingival capillaries in relation to the formation of the lead line, in: Paradentium no. 2, 86-91; Z. Rdsch., xxxix(27): July, 1930.

Direct observation of the gingival capillaries in normal individuals and in patients with the lead line on the gums shows an essentially different picture. While the capillaries adjacent to the teeth normally appear as hairpin shaped loops headed toward the teeth similar to those in the underlip or nail folds, at the point of formation of the lead line they are found enlarged and broadened often showing sharply twisted loops with a consequent slowing of the circulation. These capillaries here resemble the dermal capillaries of the mucous membrane of a patient with the scarlatinal form of toxicoderma; this may determine the early formation of a lead line. For, on the one hand, such individuals show the symptoms of capillary atony in the gingiva, before the institution of treatment and before the appearance of a toxicoderma, as in the skin; on the other hand, after beginning treatment with Bismuth, the early bismuth line appears in cases where a specially high grade slowing of the circulation could be demonstrated in the gingival capillaries. Corresponding to this, the lead line is correlated casually with the capillary stasis in the gingiva.

For method of capillaroscopy see abstract of article of Kolm-Groh, Jour. of Periodontology, page 174, vol ii(2). July, 1931.

—Author's summary, Transl., H. A. R.

97—Sorrin, Sidney, D. D. S.: **Diagnosis and periodontal disease,** in: Dent. Items of Int., lii: 514-520. 1930.

The need of thorough diagnosis is stressed. Cases are cited in which systemic symptoms simulated the effects of focal infection, but which the dentists's study of general as well as dental history and examination proved to be due to other causes. Cases of unusual disturbances proved to be due to faulty occlusion are also described. These include pulpal symptoms, pain under dentures, condyle pain, night grinding, tic douloureux, one sided abrasion, erosion, interproximal caries and drifting of upper anteriors. A number of common errors and points in radiographic diagnosis are enumerated. A brief description of the normal gingiva is given followed by a list of thirteen of Box's twenty signs of incipient periodontal disease. (See Bull. No. 7, Canadian Dental Research Foundation and Dept. of Health, Toronto, Ont., Can.)

A chart used in the periodontia clinic of the N. Y. U.* College of Dentistry is described. It calls for detailed information about the teeth and systemic factors involved in such a way as to make it possible to discover all the causes in the cases studied.

Treatment depends on removal of all factors causing lowered resistance, on scientific instrumentation, and on building up tissue resistance by proper diet and proper application of the tooth brush for cleansing and massage. The relief of traumatic occlusion is particularly important. Causes of failure are lack of confidence in treatment and the attempt to treat teeth in which the disease has progressed to a hopeless stage.

—H. J. L.

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*New York University.

98—Sturciko, F. A. (Tomsk University, Russia): **Casuistry of tubercular periodontitis,** in: Dent. J. Austral., ii: 209-212. April, 1930. (Translation).

This is a rare disease. In the two cases reported the tubercular bacillus had penetrated through the carious tooth causing a typical tubercular granuloma in the periodontal

membrane and had spread over the adjacent lymphatic glands. Case histories indicate that patients were young, process of disease long and that there were fistulae on the outside which did not heal. Unilateral infection of the surrounding tissues, periodontium, under jaw, neck and lymphatic glands was very striking. The infection first started in the periodontium and then gradually spread to the glands and then to the lungs. The tubercular bacillus can reach the periodontium in three ways, (1) gemmular; (2) in the form of ascending tubercular periodontitis; (3) through the carious cavity. Clinical statement of a tubercular periodontitis is composed of the following: (1) appearance of the vague, insignificant aches in the tooth; (2) appearance of the fistulas with the characteristic pus; (3) swelling of the infected side of the underjaw and lymphatic glands; (4) the lingering of the process with little of special destruction. Conclusion—tubercular periodontitis is serious and not as rare as we might think.

—*S. S.*

99—Tholen, E. F., M. D., D. D. S., and Balyeat, Frederick S., D. D. S., M. D.: **Epulis of the jaws**, in: Pac. Dent. Gazette, xxxviii(4): 207-211. Apr., 1930.

Epulis or tumors of the gums of various histological structure, appearance and prognosis—vary in color from the normal pink to dark, bluish red and in size from a small pea to the size of a lemon. They are found in both the upper and lower jaw from the cuspid to the first molar region, seldom in the incisal regions. The origin of the neoplasm is the periosteum of some portion of the alveolar process, occurring usually from the 20th to the 50th year of life and more frequently in females. The predisposing causes of the tumors are rough teeth, decaying roots, shell crowns and calculi.

There are two classes of the epulides: (1) the giant cell type which may have a low malignancy, with metastases in some cases; (2) fibrous type, consisting principally of fibrous tissue, resembling fibromas and never malignant. They have a characteristic tendency to recur if the site of origin is not destroyed. The repeated removal of only the top increases the chances of it becoming malignant. In diagnosis the following points are considered:

1. history of a slow painless growth
2. located near the gingival border
3. chiefly in adults of 20 to 50 years of age, more frequently in females
4. irritation found, as decayed teeth, shell crowns and calculi
5. good general health—no glandular enlargement

It is important not to confuse epulis with hypertrophied chronic inflammatory tissue which it sometimes simulates. Careful examinations with care to all detail will usually differentiate the two and microscopic examination will confirm the diagnosis. The treatment of these two conditions are entirely different.

—*J. C. S.*

100—Tishler, Benjamin, D. M. D.: **Clinical researches in periodontoclasia. The diagnostic value of the interdental papilla**, in: Dent. Cosmos, lxxii: 285. 1930.

Attention is called to the changes occurring in the septal gingivae. These are usually alterations in color or morphology, though disease may be present without change in color. The most common morphologic change is a thickening of the septal gingivae giving it a rounded appearance. The need of a better understanding of gingival conditions by the profession is emphasized.

—*A. H. M.*

101—Wolynsky, S. (Moscow): **Zur Kasuistry der syphilitischen Primäraffekte auf dem Zahnfleisch.** Casuistics of primary syphilitic lesions upon the gingiva, in: Zeitschr. f. Stomat., xxviii(11): 1099-1107. Nov., 1930.

The usual historical review of the literature dates from 1760 (Astruc and Fabore) who believed these effects in the mouth on gum, soft palate, etc., were due to osculation. Much later Gaucher, on tabulation of his observations of 326 cases of primary extragenital infection in women found 102 lesions on the lips but only five on the gingiva. Of all situations where these primary effects occur, the gingiva is most rare. The fully formed chancre upon the gum appears as a crescentic or oval ulcer, spreading along the cervical portion of the gingiva of three or four teeth (often as many as 6). The gingiva is infiltrated and light red in color; there is usually swelling of the lymph glands

(submaxillary) which are sensitive and painful on pressure, in contrast to a typical luetic scleradenitis. The author concludes:

1. In the pathology and symptomatology of diseases of the oral cavity, the hard chancre because of its rare gingival localization has great scientific and practical interest.

2. The clinical course of primary sclerosis in the mouth and especially on the gum may be atypical rendering differential diagnosis difficult.

3. The hard chancre affects the vestibular portion of the upper jaw mostly the incisive region in a great majority of cases.

4. The hard chancre originates most often from perverted sex relations; then by use of infected instruments, or household conditions.

5. The gingival chancre, since it may escape the notice not only of the patient but of the dentist to whom the patient usually first applies, urgently calls for an early diagnosis.

—*H. A. R.*

102—Yeretsky, Willa, D. D. S.: **Recognition of incipient periodontoclasia by the general practitioner and his obligations therefrom,** in: J. Am. Dent. A., xvii: 1246. 1930.

This is a plea for greater care on the part of the family dentist in the prevention and early recognition of periodontal diseases, the statement being made that "the smallest deviation from the normal in a mouth is important enough to call for a remedy." Methods for detecting the early symptoms of periodontoclasia are outlined, the need for more accurately fitted restorations are emphasized and attention called to the possible disturbances which may be caused in the periodontal tissues by the use of such drugs as bismuth, mercury, lead, luminol, etc. The need of a carefully balanced diet is also referred to.

—*A. H. M.*

103—Zemsky, James L.: **Interesting forms of gingivitis and stomatitis with consideration of their diagnosis and treatment,** in: Dent. Items of Int., 269-280. April, 1930.

Author discusses gingivitis under headings of Hypertrophic gingivitis, local hypertrophic gingivitis, general hypertrophic gingivitis, chronic ulcerative gingivitis, chronic non-ulcerative gingivitis, subacute gingivitis, acute fuso-spirillary gingivitis, and pericoronitis, all caused by local irritation either mechanical, chemical, bacterial, or combinations of them.

Treatment: removal of cause and antiseptic irrigations.

Under headings of stomatitis due to systemic disease—diabetic stomatitis, uremia, nephritis, scurvy and tuberculous stomatitis.

Treatment to be undertaken with coöperation of physician as the necessary general treatment is "obviously beyond the scope of the dental practitioner."
Abstractor's note.

Tuberculous ulcers in the mouth may occur at points distant from local source of irritation, they have a tendency to shell out or cavitate, are comparatively rare even in advanced pulmonary cases, but when they do occur are nearly always in far advanced pulmonary, intestinal and laryngeal tuberculosis. Patients are very ill and do not often come under the care of general dental practitioner.

Primary tuberculous lesions in the mouth are so rare as almost not to exist.

Treatment: bland washes and ultra violet radiation.

—*C. S. K.*

104—Zimmermann, Dr. Hans (Königsberg, Ger.): **Elephantiasis of the gum from an inflammatory cause,** in: Dtsche Z. Wchnschr. July, 1930. Abs. Dent. Dig., xxxvi: 670-1. Oct., 1930.

By elephantiasis is intended to denote a condition of hyperplasia and hypertrophy of the subcutaneous tissue and skin. The cause is looked for in a lymph stasis and failure of the veins to carry off the blood from the skin. Tissue affected with elephantiasis is particularly susceptible to streptococci. Other authorities believe that the causative streptococci are to be found in the teeth and tonsils.

A feature of elephantiasis is the large amount of tissue fluid and lymph present.

A classification of elephantiasis is then given and the author discusses elephantiasis of the face.

The case described by the present author involved both mandible and maxilla, and photographs of plaster models show that the hypertrophy of the gums is very extensive. On the upper right side the teeth are ob-

scured by the growth. A vile discharge was seen about the necks of the teeth. X-rays show three retained third molars and two mandibular second bicuspids.

The growths were radically removed together with the teeth involved until healthy bone was reached. Under local anesthesia all diseased tissue was eradicated with the electric knife. Healing was excellent.

—*(Abridged) copy.*

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Supplementary 1928

105—Clemm, Dr. Walther Nich: Trigeminusneuralgie als folge von parodontitis. Trigeminal neuralgia as a result of parodontitis, in: Therapie der Gegenwart, lxix(7): 335-336. 1928.

In parodontitis violent crises of pain may occur which always accompany the actual outbreak of recurrent attacks. A report is made of a case in which a violent trigeminus neuralgia of the mandibular branch was first treated by t. i. d. injections (intra-venous) of *Neopyrin* (Knoll) and by inhalation also t. i. d. of 30 drops of *Chlorylen,* sprinkled on a tiny ball of cotton and introduced into the nostril of the affected side. New attacks of neuralgia could likewise always be aborted by the same treatment.

—*H. A. R.*

(*f*)—Treatment

(Continued from January, 1932 issue, page 52)

1930

124—Adrion, Prof. Dr.: **Technique de la suppression des clapiers pyorrhëiques.** Technique for the suppression of the pyorrheic pockets, in: Zahnä. Rdsch. No. 23, p. 969. 1930.

Adrion having made many trials of the method of Gottlieb and of Neumann and others has gone back to the treatment described by Roemer in 1909 which consists in destruction of the pocket by the electrocautery. To avoid too great destruction or bony necroses, the precise depth of the pockets must be determined in advance. Anesthesia is a matter of choice if the operator has had some experience in applying the cautery for the incandescent point destroys the nerve-endings instantaneously. The scar produced forms a perfect dressing.

Three or four days later, postoperative treatment is begun, i. e., cauterization with Zn chloride or lactic acid (8 to 10%) in order to prevent all formation of granulation tissue and to permit the epithelization at the gingival margin. Experience has shown that teeth thus treated were much less sensitive to changes of temperature than with other methods. In case of severe reaction, hot concentrated solution of sodium bicarbonate is applied on the tooth cervix which is previously dried with care. Adrion has also used electro-coagulation with a diathermic apparatus; he notes that Dr. Maurice Roy buries an extra fine cautery needle in the papilla to provoke recession by cicatrization of the pocket.

—*H. A. R.*

125—Aiguier, James E., Ph. G., D. D. S.: **The use of drugs in dentistry; administration, application and limitations,** in: J. Am. Dent. A., xvii(8): 1426-40. Aug., 1930.

An *excellent* article on dental therapeutics of which the portions relating to gingivitis, Vincent's infection, aphthous stomatitis, and mouthwashes are of interest in periodontia. For inflammed gingivae, stomatitis and lacerations in mouth, the author prefers Talbot's solution (Zinc iodide 15 parts, water 10 parts, iodin crystals 25 parts, glycerin 50 parts). He condemns the use of tincture of iodine in the mouth.

For ulcerative stomatitis (Vincent's) he uses at 24 hour intervals 8% chromic acid painted on the ulcers with cotton applicator, in packed mouth. The solution is removed after two minutes with bibulous paper. The pericoronal and other pockets in cases of Vincent's infection he packs with very finely powdered anhydrous copper sulphate at 24 hour intervals, using a moistened iridioplatinum loop and avoiding the use of too much at one sitting. The pocket is sealed with petrolatum and the patient instructed not to irrigate the mouth or swallow for one hour. A mouth wash consisting of scant ¼ tsp. salt, scant tsp. powdered borax, tsp. to tbsp. of hydrogen peroxide, in a large glass of hot water is used every three hours, being freshly made each time. The patient is instructed to hold portions in the mouth for ½ minute by the watch until the entire solution is used.

For aphthous stomatitis the author uses 8% zinc chloride solution applied to ulcer previously dried, and held there for one to two minutes. This is followed by Talbot's solution. Two, and infrequently three, applications may be required at 24 hour intervals.

The requirements for a general mouth wash are given; it must be non-caustic, non-decalcifying, non-poisonous, of no effect on the flow of saliva or its ingredients, sufficiently cleansing and of good taste and odor. A mildly alkaline normal sodium chloride solution is recommended. He also suggests a solution composed of ¼ tsp. salt, ¼ tsp. borax, 1 tsp. hydrogen peroxide, 1 glass hot water. The relative bactericidal properties of four mouth washes as determined by Appleton and Polevitzky are given, noting the effects of three minute applications on the saliva:

Metaphen ——— 1-5000 99.83% effective

Hexylresorcinol	1-2000	99.89% effective
Sodium ricinoleate	10-1000	99.39% effective
Lavoris	½ strength	83-88% effective

—*H. J. L.*

126—Barnhart, H. M., D. D. S.: A method of eliminating the pyorrhea pocket without surgery, in: Pac. Dent. Gaz., xxxviii(11): 720-722. Nov., 1930.

There are two accepted methods of treating pyorrhea—the surgical and curettage. The surgical eliminates pockets but there is greater destruction of tissue. In curettage with sodium sulphide medication there is less tissue destruction and the pocket is practically, though not always, entirely obliterated. The sodium sulphide destroys the epithelium lining the pocket, which must be removed using a fine curette, gently scraping the outer wall. The formula for this solution consists of

Sodium sulphide	150 grs.
Sodium carbonate	40 grs.
Water q. s.	2 ozs.

Technic for packing pockets: after relieving trauma and curettage, the area is protected with cotton rolls and dried thoroughly; with pliers grasp a cotton cone and saturate with the sodium sulphide and carry to the bottom of the pocket, the remainder of pocket is packed with cotton, allowing it to project slightly above so as to dissolve the epithelium at the crest of the tissue. The pocket must not be packed too tightly—but packing is allowed to remain from seven to ten minutes. The disintegrated epithelium must be thoroughly removed—flush area and do not disturb for one week. If it is then found there is not enough recession or closure of the pocket, repeat the treatment. The advantages of the use of sodium sulphide are:

1. simplicity of treatment
2. painless in its application
3. action can be controlled
4. in some cases there is some regeneration of soft tissue.

—*J. C. S.*

127—Black, Arthur D., M. D., D. D. S., Sc. D.: Pathology and treatment of pyorrhea, in: Dent. Mag. & Or. Top., xlvii(6): 571-581. June, 1930.

The author stresses the intimate interdependence of all parts of the mouth and teeth in maintaining a healthy functioning masticating machine. Reparative procedures are but a means to this end. Among the points he makes in the pathology is the fact that bone at the crest tends to be resorbed when the peridental membrane is lost, while bone at the apex tends to fill in the alveolus. If alveolar bone is destroyed by excessive lateral stresses the peridental membrane may not be destroyed at first; and if stress is relieved the alveolar crest may be expected to rebuild. The pocket progresses in a flame shape toward the apex because of the direction of lymph channels. Unless secondary infection occurs deep in the pocket, it is always widest at the gingival margin. Except in cases of occlusal trauma, bone is not destroyed unless peridental membrane is involved, as is shown by the study of several thousand radiographs. In cases of occlusal trauma the bone loss is progressive from the crest down. When the cementum is denuded its cells die and reattachment to it therefore cannot be expected. The occurrence of the pocket is due to infection which destroys peridental fibers adjacent to the lymph channels, the blood vessels becoming occluded. The epithelium penetrates to line the progressive ulcer, or it may penetrate in advance. Overlying bone is resorbed because of loss of function, as well as through adjacence to the inflammation. A good epithelial covering is essential to protection of underlying tissues. In deep pockets the epithelium is thin and loose. Hemorrhage following gentle manipulation with a blunt instrument inserted in a pocket indicates a poor epithelial lining. The tooth tends to move away from the pocket; this movement may bring it into traumatic occlusion with its antagonist, while grinding for relief only allows farther shifting. The marginal gingiva early shows symptoms of bone injury beneath; swelling, redness and increased mobility are very significant symptoms. A minute mouth examination and charting are essential to proper treatment. Teeth showing hopeless disease or interfering with efficient reconstruction should be extracted at once.

The object of treatment is to eliminate infection and prevent its recurrence. This can be done by scaling, polishing and frequent irrigation until a healthy epithelium lines the pockets. If the result is unsatisfactory, resection of the overlying tissue is indicated

and where the pockets are deep, resection is to be preferred. The gingiva is cut evenly to the level of the apex of the deepest pocket. This usually involves the removal of some attached pericementum and bone. The bone is then cut one sixteenth of an inch below the level of the cut surface. The wound is irrigated at two-day intervals until covered with epithelium. After a time a new marginal gingiva grows up from the cut surface.

This operation is not indicated in the lingual of upper incisors or in conspicuous areas. For single pockets over the upper incisors, detached tissue only is removed to the limit of the pocket. A new overlying tissue partially reforms the pocket, but it is well covered with epithelium. For proximal pockets, the labial and lingual tissues are cut away so as to leave the apex of the pocket as the highest point crownward.

The greatest service in this field lies in the critical examination of the gingiva for early symptoms so that treatment can be instituted while it yet may be done safely.

—*H. J. L.*

128—Broderick, F. W., M. R. C. S., L. R. C. P., L. D. S. (London): **Treatment and prevention of pyorrhea alveolaris,** in: Amer. Dent. Surg., 50(1): 27-32. Jan., 1930.

The author thinks that the infective factor in pyorrhea is incidental. Failure to treat the disease adequately in the past is due to devoting attention to this factor to the exclusion of more essential ones. He considers the formation of subgingival calculus due to biochemical conditions, the primary irritant. Since a pocket once formed cannot be freed of infection, it should be eliminated by gingivectomy. To the author reattachment seems impossible. Surgical cutting away of the tissue is not advocated because of the hemorrhage; the use of the cautery is condemned because of after pain. The author uses the diathermic cautery, the technic of which is described. By this technic the overlying tissue is slightly coagulated without cauterization so that eventually it is absorbed without sloughing. The author extracts teeth one-third of whose attachment or alveolar bone is lost.

To prevent recurrence of the pyorrhea the cause of tartar formation is attacked. This the author believes to be an alkalosis which is determined by testing the saliva by the use of a capillator.* If alkalosis is present it is treated by increasing exercise, increased use of acid ash foods, attacking any causes of anoxemia; and even by administering two grains of Ammon. chlor. in water upon arising. The rate of administration of the latter drug is regulated according to a daily test of the saliva.

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*A colorimetric method of determining pH by the use of capillary tubes.

—*H. J. L.*

129—Evers, Harvey, M. S., F. R. C. S.: **Dental troubles during pregnancy—with special reference to their management,** in: Dent. Rec., 1: 194-6. May, 1930. Rev. Dent. J. Austral., ii(7): 351-352. July, 1930.

The essayist states that for close upon a decade he has been charged with the care and supervision of nearly 3,000 expectant mothers annually, mostly hospital patients. He has, therefore, had forced upon him the dangers of oral sepsis at such a critical period. Consequently, failing to glean in medical or dental literature desirable information, he has presented this subject, entirely original as far as he is concerned, with the hope that a free discussion will be helpful to both the medical and dental professions.

Oral or focal sepsis adversely affects the pregnant state by

1. Producing a condition of lowered health through gastric or digestive disturbance and loss of sleep due to pain.

2. Producing a severe metabolic disturbance leading to a dangerous toxemia which can be aggravated by oral sepsis.

3. Producing or aggravating toxaemic kidney diseases associated with pregnancy which can be relieved or prevented by the removal of septic foci from mouth and tonsils.

4. The same toxaemic processes underlie dangerous cases of severe vomiting in the later months, and some progress to the utterly hopeless condition of acute yellow atrophy of the liver.

5. Producing puerperal sepsis which is believed to originate from septic foci previously present in the body. He has seen definite cases of puerperal pyrexia which resisted all forms of treatment except extraction of septic teeth. In considering the nature of treatment of dental troubles during that

period, some points of the physiology of pregnancy must be recognized.

6. The character and mental outlook of the patient is frequently changed. The patient is hypersensitive to pain, there is generally a considerable metabolic disturbance especially in the earlier months, which can readily become a dangerous toxemia. In the later months there is a considerable and increasing strain, as provision has to be made for nutrition and oxygen for, and elimination of waste products from the growing foetus. Generally speaking in the middle period the woman achieves her nearest approach to equilibrium. The liability to miscarriage is greatest in the second and third months.

The writer believes the essentials of dental treatment are to relieve pain and to eliminate sepsis.

The essential precaution is to avoid shock, mental or physical. In the first 3 mos., only the simplest of operations should be undertaken, the major procedures being left to the safer period between the fourth and seventh month. During the eighth and ninth month palliative measures for allaying pain and diminishing sepsis are justifiable. All other treatment should be left until later. Pulp work is a particularly delicate matter, so that procedures which can be definitely painless alone are safe.

Where a large number of septic teeth are present, clearance under general anaesthesia in the middle period of pregnancy is not only justifiable, but desirable. Local anaesthesia during pregnancy is not desirable, as the essayist has seen more general post-operative upset associated with local than with general anaesthesia. The anaesthetic favored is chloroform and oxygen or A. C. E. and oxygen but, though advocated by textbooks, the essayist does not subscribe to the use of gas and oxygen as being the safest because of the risk of cyanosis.

The operation should be undertaken in the home of the patient as the familiar surroundings have a soothing mental effect.

130—Gilbert, G. N., D. D. S.: **How I treat pyorrhea,** in: Dent. Digest, xxxvi(8): 525-6. 1930.

The author after taking X-rays and restoring contacts, gives his patients instruction in the use of a disclosing solution. He then supplies them with specific instructions and equipment for the home care of the mouth. The patients return weekly for curettage until the work is completed.

The author quotes Fones as saying: "Dentistry should be practiced continuously and constructively by each individual for himself or herself with the dentist as an occasional helper, and not by the dentist with the patient as an occasional helper."

—*J. L. W.*

131—Gottlieb, Bernhard and Orban, Balint: **Veränderungen im periodontium nach chirurgischer diathermie.** Changes in the periodontium due to surgical diathermy, in: Zeitschr. f. Stomat., xxviii: 1208-13. Dec., 1930. Abs. Brit. Dent. J., lii(1): 220. Mar., 1931.

Pursuing their experiments in search of a reliable root filling, Gottlieb and Orban have examined the results of the application of diathermy in the treatment of root canals. These experiments were conducted on the teeth of dogs. Some of the pulps were cauterized, leaving only the necrosed pulps in the canal. When the coronal portion only was cauterized, there was extensive absorption of the tooth and inflammation in the adjacent periodontium, atrophy of the bone and osteophytic infiltration of the medullary spaces. In nineteen of the roots there was bony union between the root surface and the alveolar bone. The teeth showing union with the bone were those which had the largest doses. In no case was there absorption of the cement; ankylosis was the result of ossification of the suspensory ligament. So much was this the case that ossification had proceeded as far as the center of the periodontium, and there was transition from tooth to bone. In these bridge-like projections of bone the structure of the peridental membrane could be recognized. It is just possible that these primary ankyloses are replaced by bone lamellae, and that this condition may remain for a considerable time. Feldman found the same results from treatment with formaldehyde; but the authors of the above experiments do not yet give an explanation for the difference between these treatments, as research is still proceeding. Nevertheless, there are many ways in which union between bone and teeth may be stimulated; there are those cases recorded after re-implantation; retained teeth; union after absorption due to

traumatic occlusion; and finally milk teeth and the remains of milk teeth.

—*Copy.*

132—Haley, Philip S., Ph. C., D. D. S.: **The treatment of pyorrhea,** in: D. Cosmos, lxxii(9): 907-911. Sept., 1930.

A pocket packing technic for pyorrhea treatment. The author assumes that pyorrhea is due to parasitic organisms growing in the sordes on the teeth, which penetrate the sulcus epithelium and destroy the underlying connective tissues. He notes the constitutional effects of such invasion. Secondary causes like malocclusion may play a part, but many persons do not seem to show trauma who have very irregular occlusion. He thinks Vincent's organisms always take part in pyorrhea, and takes but little stock in dietary defects as factors, since signs of pyorrhea are found in savages, prehistoric man and even wild animals.

The author's technic consists in syringing the pockets with a chlorine solution and then packing, using cotton twills of appropriate length and thickness (½ to 2 inches in length, 2 to 8 mm. in diameter) (sic). The cotton is soaked in a mixture of tinct. of aconite 90 parts, tinct. iodine 10 parts, for the first time in the average case. When much reduction of tissue is indicated, liquefied phenol or tricresol-formalin may be used but the cotton is squeezed dry before packing. It is then gently and slowly carried into the deepest portion of the pocket with ends remaining exposed in the embrasure so that they may be hooked out with a bent pin by the patient at the appropriate time. The time of retention varies from 1 to 24 hours, being shortest at first. The packing should not distend the overlying tissue uncomfortably; it is renewed from day to day, gradually dilating the pocket. Granulation tissue is built up from the bottom while the overlying tissue shrinks, thus obliterating the pockets.

The drugs used during this treatment may be varied. For specific action on Vincent's organisms, copper sulfate may be used for one treatment. Sulfarsphenamin 1.6 gm. dissolved in ½ cc. aq. dest. and mixed with 30 cc. glycerin may be used topically for office treatment, but is not left on the packs. Scaling of calculus and shaving of the cementum is done after several days of packing, when the root surfaces are visible and easily accessible. The author uses a special set of scalers with curved cutting edges and rounded corners. After scaling, the root surface is cleaned with 7% hydrochloric acid solution followed immediately with sodium bicarbonate and washing. Where lateral fistulae exist in connection with pockets, after a few days of packing the gingiva is incised from fistula to margin.

Home care consists in brushing and taping the teeth. The brush advocated has a wide tufted end; bristles should be moderately hard but well softened with hot water before using. It is pressed forcibly between the teeth on the buccal and labial surfaces and vibrated. It is then jabbed and pressed but not drawn over the occlusal and lingual surfaces. Visits are made weekly for the first six months, once a month for the next six months. The monthly removal of tartar causes it gradually to cease forming. A paste of pumice, cuttle fish bone, glycerin, carbolated vaseline and flavoring is used by the patient as a tartar remover, in cases where it is indicated.

The treatment advocated does not cause so much tissue loss as surgical resection. When home care is excellent and can be supervised over a long period, a surprising amount of tissue regeneration will occur, in some cases to complete regeneration of the interdental papilla up to the contact point.

—*H. J. L.*

133—Hartman, Leroy L., D. D. S.: **Relation of operative dentistry to diseases of the periodontium,** in: J. Am. Dent. A., xvii: 1299-1302. July, 1930.

Better care of the periodontium is urged and the following suggestions made: careful diagnosis and planning and carrying out each step in operative procedures so that the minimum amount of damage will be done; attention to pits and fissures, that they may be filled before large restorations are necessary; watchfulness in placing ligature and rubber dam; selection of filling material which best meets the requirements; fused porcelain best for gingival third restorations, then gold foil and gold inlays; avoidance of overhanging margins and excess cement; finishing fillings by drawing instruments away from gum margins; careful attention to contour, contact points and marginal ridges; elimination

of high spots on the occlusal; use of matrix for all proximal amalgam restorations.

—*A. C. H.*

134—Hesse, Gustav: **Chirurgische oder medicamentöse behandlung der paradentose.** Surgical or medical treatment of paradentosis, in: Fortschr. D. Z., vi(1): 226-228. Mar., 1930.

The author discusses the use of "dentiferm" by Beyer-Hilgendorff; use of the curette by Hentze, Münzesheimer, Lipschitz, etc. Technic of flap operations, etc.

135—Hopkins, Alvah S., D. D. S.: **Detoxification in treatment of acute and chronic periodontal diseases by sodium ricinoleate,** in: D. Cosmos, lxxii(8): 830-841. Aug., 1930.

This paper attempts to prove the value of detoxification in the treatment of periodontal diseases.

Three fundamental factors underlie the proof and they are:

1. that bacteria cause disease by the toxins they produce.
2. that sodium ricinoleate will destroy these toxins.
3. that sodium ricinoleate is of definite value in such treatment.

Authorities are quoted offering the fact that toxins produce disease and among these quoted are Detweiler, Wells, Bryan and Kolmer; and the conclusion is that bacteria cause disease through the toxins which are a metabolic by-product of bacterial action.

Antiseptics sometimes leave the tissues in a weakened state in regard to their ability to ward off bacterial action. Antitoxin is an agent that has the power to neutralize a toxin without any deleterious action on the bacteria which produced that toxin. Sodium ricinoleate kills the streptococcus on contact, and renders harmless its toxins.

Clinical evidence is produced.

—*W. C. G.*

136—Medwedewa, T.: **Erfahrungen mit Besredka-filtraten bei pyorrhoea alveolaris und gingivitis** (Med. Myal Usbek 1929, nr. 8 [russisch]. Experiences with Besredka's antivirus in pyorrhea alveolaris and gingivitis, in: Zentralbl. f. Bakt., I Ref., xcvii: 469. May, 1930. Abs. Cosmos, lxxii (8): 896. Aug., 1930.

Autoantivirus prepared chiefly from streptococci and staphylococci. Local applications did not benefit the patients and in some cases the condition was made worse.

137—Michaëlis, H. K. (Hague): **De therapeutische maatregelen welke ons ten dienste staan bij de behandeling der z. g. pyorrhea alveolaris.** The therapeutic measures used in the treatment of pyorrhea alveolaris, in: Tijdschr. Tandheelk. Dutch Jour. of Dentistry, xxxvii: 410-426. 1930.

The author distinguishes between "Schmutz" or the filth pyorrhea of Gottlieb, or what in Holland is called "Sordes"; and the usual genuine pyorrhea alveolaris. The treatment of the former is eminently the domain of the dentist and consists in the elimination of external causes and the best oral hygiene on the part of both dentist and patient. This other form should only be diagnosed when the first is out of the way. It depends upon the colloido-chemical equilibric disturbance and on the presence of systemic disease (diabetes, etc.). Treatment of these should be left to the physician. The symptomatic treatment which must parallel the constitutional, consists in the removal of irritation, use of the Dunlop method, etc. Surgical eradication not so popular as formerly. Serum treatment doubtful, not advocated by the author, since it does not lie within the sphere of the dentist.

—*Transl. Abs. H. A. R.*

138—Moyle, Dr. C. T., D. D. S. (Canada): **The ultra-violet ray and its uses in dentistry,** in: Oral Health (Toronto), xx: 540-1. 1930. Abs. Brit. Dent. J., li(23): 1291. Dec., 1930.

The essayist's address consisted of some general statements, chief of which were:

That the rays will destroy most forms of bacteria in a few seconds even passing through the enamel and dentin of a tooth, also some forms of pathological tissue; that they stimulate normal cell tissue, improve the bactericidal properties of the blood and increase the calcium and phosphorus; that they have an analgesic effect on nerve endings. In the mouth, exposures from 10 to 30 seconds, 2 to 3 times weekly, increasing the length of exposure at each sitting. Blondes tolerate less than brunettes.

Among possible uses in dentistry are noted,

aid in the treatment of pyorrhea alveolaris and trench mouth.

—Copy in brief, B. D. J., H. A. R.

139—Ottolenghi, Renato (Turin): **L'antivirus Besredka nel trattamento della malattie della cairtá orale.** Besredka's antivirus in the treatment of oral diseases, in: La Stomatologia, xxviii: 112-115. Feb., 1930. Abs. D. Cosmos, lxxii: 894. Aug., 1930.

Ottolenghi prepared a stock antivirus. Bacterial colonies were isolated on agar from gingival pus. These colonies were inoculated into flasks of broth and incubated at 37 C. After ten days this broth was filtered (L. Chamberland) reinoculated and again incubated at 37 C. Eight days later, after refiltering, this broth was used as the antivirus. Here some at least of the good results must be attributable to a non-specific action. Inasmuch as there is a marked lack of case reports by other advocates, those given by Ottolenghi are worthy of note. Two cases of ulcerative stomatitis, three of gingivitis, one simple, one hypertrophic and one ulcerative, and two cases of dry socket are reported in detail.

Besides having used antivirus in the conditions mentioned above, Ottolenghi has applied it in the stomatitis of pregnancy, in impacted third molars, in chronic periostitis, in teeth with gangrenous pulps, etc. In all these conditions relief of pain and material improvement of the other acute symptoms resulted.

140—Rasmussen, A. T.: **Influence of ultra-violet rays on periodontal diseases,** in: Arch. Phys. Ther. X-ray Rad., xi: 212-16. May, 1930. Abs. J. Am. Dent. A., xvii(7): 1375. July, 1930.

For the purposes of this study the author divides diseases of the periodontal stuctures into

1. inflammatory conditions arising from trauma, chronic irritation or drugs;
2. infections the result of specific pathogenic micro-organisms invading the tissues;
3. lesions resulting from, or a part of, some general systemic disturbance.

In the first group, trauma or iritation may result from the presence of broken down teeth, filth, poorly constructed or improperly fitted crowns or bridges, of poorly contoured or overhanging tooth fillings, and the condition ensuing may range from slight inflammation to tumefaction with vascular congestion, followed by infection and necrosis of the parts. Similar conditions may arise from the use of some drug or mineral. Irradiation will assist in reducing swelling, congestion, pain and hemorrhage, and in improving circulation. The cause of the disturbance must, of course, be removed to prevent return of the symptoms. Further irradiation will hasten return to normal. Irradiation in infections which are usually attended with a lowering of the alkali content of the body fluids tends to bring the latter condition back to normal, and promotes cellular activity, increasing circulation, and so carrying off the bacterial toxins. Organisms coming in optical contact with the rays are destroyed. In Vincent's infection, ultra-violet radiations decrease the clotting time by increasing the calcium in the blood. Thus, hemorrhage is avoided and curettement becomes possible without danger. Irradiation is, of course, only an adjuvant in this condition as diet, medication, elimination of pockets and all sources of irritation are necessary. The same is true of other periodontal conditions.

In group three are all periodontal diseases which have as their primary causes some underlying systemic disease or disturbance of the metabolic processes.

In periodontoclasia or osteoclasia, irradiation promotes recalcification of the bones if destruction has not been too great.

In osteomalacia, a deficiency disease, because of a lowered Ca or P index, a demand is made on the bones for these minerals. The minerals are absorbed more readily from the highly vascular alveolar process than from the denser bones, and what is needed is something that will activate the metabolic processes so that instead of continually drawing out the mineral salts, these salts will be assimilated from the food and deposited in the skeleton. This may be accomplished by irradiation, or by the employment of irradiated substances such as cod liver oil or ergosterol.

—Copy of abstract.

141—Roy, Dr. Maurice (Paris): **Pyorrhoea alveolaris: its nature, pathogeny and treatment,** in: D. Cosmos, lxxii: 390-99. Apr., 1930.

A clear and interesting presentation of Dr. Roy's convictions concerning pyorrhoea alveolaris; a term which he considers a misnomer but he says, "when long use has sanctioned a name good or bad for a certain disease, it is advantageous to retain it, on condition that all agree upon the morbid complexus in question."

The author's conclusions are as follows:

1. Premature senile resorption is the initial and constant lesion of pyorrhea, preceding all others and the only one which appears alone, to the exclusion of all the others. This resorption is due to a constitutional cause related to an arthritic diathesis.

2. The formation of pyorrheal pockets is due to an inequality between alveolar resorption, initial phenomenon of this disease, and gingival resorption.

3. The evolution of pyorrhea alveolaris in the incidence of its diverse morbid symptoms may be described as follows: (a) premature senile resorption, (b) formation of pus pockets, (c) suppuration and formation of calculi, (d) development of static disturbance.

4. Pyorrhea alveolaris is an autonomous disease dependent upon an arthritic diathesis (or having a pathological relation to such a diathesis) and marked by premature senile resorption due to a constitutional source in the individual, with or without the formation of pus pockets, the latter entailing the successive development of suppuration, calculi and all other local symptoms of the disease.

5. Pyorrhea alveolaris is undoubtedly a curable disease, the cure being much more easy of attainment during its early stage, hence the importance of learning to recognize pyorrhea at its initial appearance.

6. The treatment of pyorrhea should conform to the following therapeutic requirements: (a) treatment of patient's general condition, (b) establishment of strict oral hygiene, (c) curetting of pyorrheal pockets, (d) eradication of pockets, (e) treatment of static disturbances.

7. Pyorrheal prophylaxis is based upon strict oral hygiene guided by the principle that no pus pocket is ever formed at any part of the gingivae upon which a stiff brush is used daily. The faithful exercise of this care should be carefully watched by the dentist, who should educate the patient in its proper performance and by frequent examinations discover and treat the least manifestation of the disease.

Numerous diagrams illustrate this article.

—*C. R.*

142—Spinney, H. L., D. D. S.: Pyorrhea and its causes, in: Pac. Dent. Gaz., xxxviii(7): 444-448. July, 1930.

Classifies pyorrhea as scorbutic and rachitic. In treatment uses ultra-violet radiation, scaling and medication locally, with systemic check and diet correction done by physician. Frequent radiographic and bacteriologic checks made.

—*A. G. J.*

143—Taylor, Bruce L., D. D. S.: How the general practitioner of dentistry can prevent and cure pyorrhea, in: J. Am. Dent. A., xvii(9): 1688-94. Sept., 1930.

The author feels at times that dentistry is a 50 per cent profession, 50 per cent for restorative work and nothing for prevention.

G. V. Black stated that it would be from 100 to 200 years before the public, with the aid of the dental profession, could be taught how to prevent dental caries, and so brought forth the principle of "extension for prevention." Dr. Black was also interested in the prevention of disease of the supporting structures of the teeth and urged, that the dentist should make a careful examination of the gingivae of every patient, and if inflammation were found, he should search for the cause and remove it.

We must bear in mind that there are three distinct and separate structures which support, and invest the teeth, namely, the gingiva, the pericementum or pericemental membrane and the alveolar process. For his own convenience author has classified the diseases of these three structures and given them his terminology. Each of the diseases has a definite pathology which distinguishes it from the others.

The author believes that one thing causes pyorrhea, and that is inflammation, if we can prevent this we can prevent pyorrhea. A full understanding of the inflammatory process of the gingivae and its relation to the formation of subgingival calculus is most important. There are many causes of inflammation of the gums, chief among them

being the presence of micro-organisms, trauma, diet deficiencies, etc.

The first and most important thing in the treatment for the prevention of pyorrhea, or for pyorrhea already present, is thorough instrumentation or curettage of every root surface. After instrumentation has been completed, the teeth should be thoroughly polished, using the engine and pumice flour and then the orange wood points, and dental tape. A final check must be made on rough fillings, and occlusion. Patient must be instructed in the home care of the mouth, and asked to return for prophylaxis once every three months.

—*S. R.*

144—Tishler, Benjamin F., D. M. D.: **Some factors governing results in conservative periodontal treatment,** in: Dent. Items of Interest, lii(9): 686-692. Sept., 1930.

This article was written for the benefit of the general practitioner and consists of a consideration of some details which influence periodontal treatment results, one of the most important of which is the selection of cases. Unless a practitioner is particularly interested in and has developed a liking for the task it is impossible for him to treat pathologic pockets three or more mm. in depth with any degree of success, particularly around multirooted teeth.

It is almost impossible for a dentist to correct a badly balanced diet, particularly for a patient in poor health and a radical dietary change is best outlined by a specialist.

No more important service has been recommended to the profession, in recent years, than that advanced by periodontists regarding the influence of mouth hygiene and gingival massage on the permanence of treatment results. It is the author's contention that every dentist should learn a recognized method of home care such as Charter's, Stillman's or Hartzell's, and demonstrate it to every patient old and new. Many refer this service to a dental hygienist and assume no responsibility regarding it, but the author emphasizes the need for careful selection of cases and *personal* supervision and demonstration of oral hygiene measures.

—*H. H. C.*

145—Vastine, A. B., D. D. S.: **Research in subgingival therapy,** in: J. Am. Dent. A., xvii(3): 507-511. Mar., 1930.

The author stresses relation between gingivitis and systemic disease. The gingivitis may act as a portal of entry for organisms affecting other parts, while it in turn may be a symptom of a systemic derangement. One reacts on the other. Gingivitis may be difficult to treat until a concomitant tonsillitis is treated. The gingival "trench" is peculiarly susceptible to organisms with a marked potential for becoming a focus of infection.

The most important organisms of subgingival infection are spirillae, amebae, and the cocci. The author suggests drugs for subgingival therapy using dyes for the cocci (mercurochrome, gentian violet, acri-violet); for superficial organisms various arsenicals, chlorine, iodine, zinc, phenol, silver and mercury preparations as well as oxidizing and alkaline agents. For the Vincent's organisms 5% arsphenamine in glycerine is used; in half grain doses intramuscularly, emetin hydro-chloride is effective in amebic infections. Acidosis may be mistaken for ulcerogingivitis, in which the author uses a high vitamin diet in the form of orange juice, yeast and cod liver oil.

—*H. J. L.*

146—Withycombe, R. Morse: **Treatment of pyorrhoea alveolaris should be undertaken in childhood,** in: Dent. J. Austral, ii: 462-467. Sept., 1930.

It is the belief of the author that the occlusion of children's teeth should be watched cautiously, for all cases exhibiting traumatic incoördination must develop pyorrhea sooner or later unless the occlusion is rectified. This perverted occlusion is a primary factor in the development of periodontal disease. His statistics indicate that caries destroys 15% of all teeth lost to civilization while pyorrhea demands 85%. It is stated that Gottlieb's theory (that traumatic occlusion eventuates from teeth, some moving more constantly occlusalward during life and erupting more rapidly than others) is incorrect. He feels that Gottlieb mistakes the abnormal for the normal, for the abnormal condition is fast becoming the general condition of civilized people. Absorption of the alveolar walls, he is convinced is due entirely to trauma. If we correct occlusion, the hemorrhage with its exudates, calcium salts and carbon dioxide, ceases and so the disease is controlled. It is the writer's opinion that caries is disappearing in an inverse ratio to the increase of

periodontal disease. The slightest maladjustment of the temporo-mandibular joint, through cusp interference or from any other cause, will make the teeth normally unusable. Never relax close observation at all ages, but especially in childhood when the foundations are being laid. The article champions traumatic occlusion as a primary factor in the etiology of periodontal disease and advises that even when all seems well we should keep up the watchfulness, look for a disadjustment of occlusion and correct it, as we would look for an early carious cavity and fill it.

—S.S.

* * *

Supplementary 1929

147—Béal, G. and Levaditi, C.: **Recherches sur la vaccination dans la pyorrhée alvéolaire, les chimio-accidents d'éruption des dents et les affections aiguës et chroniques nasopharyngées par un chimiovaccin arséno-spirillaire.** Researches on the use, in alveolar pyorrhea, in chemical accidents of tooth eruption, and in acute and chronic nasopharyngeal affections, of a chemical vaccine arsenical and spirocheticide, in: Jour. des Praticiens, xliii(46): Nov., 1929; also Rév. gén. de clin. et de thérapie, xliii: 753-758. Nov., 1929.

In pyorrhea alveolaris, the chief factor is recognized as a microbic flora composed mostly of spirochetes associated with other saprophytes of the buccal cavity. But the soil is also a predisposing factor which unites with this flora to favor its growth and exaggerate its harmful effects. The arsenicals, such as atoxyl, arsenobenzene, other arsenical derivatives and the salts of bismuth are spirocheticides.

The authors think that these drugs, subsequently to the transformations undergone in the organism, act by exaggerating the microbicide activities of the antibodies or of the cellular elements elaborated by them. They have succeeded in culturing, on a *Swift* medium, a staphylococcus, an anaerobic streptococcus and a spirochete. These cultures mixed, and aged for 15 to 18 days are tyndalized, diluted with normal salt solution and treated with sodic salts at a suitable concentration, sterilized anew and placed in ampules. They use also a dry vaccine.

If the treatment is carefully applied, pyorrhea often disappears in some weeks, in all cases in some months.

Transl. from article, H. A. R.

148—Woodle, J. M., D. D. S.: **The use of ammoniacal silver nitrate and formalin in the treatment of periodontoclasia,** in: Dent. Items of Int., li(2): 103-106. Feb., 1929.

The author thinks that the scientific investigations of Box, with those of Stillman and McCall leave small room for doubt that traumatic occlusion is the cause of this disease. The surgical methods of treatment are applicable to only a few cases. The treatment discussed is familiar, except possibly the author's employment of three or four treatments of grinding before instituting therapeutic measures. Exception is taken to a statement by Tishler (Items of Int., Jan., 1929) that no therapeutic agents are essential in arresting the flow of pus. The author's technique in using the solutions of ammoniacal silver nitrate followed by formalin is described.

—*H. A. R.*

(g)—Home Care and Prophylaxis

(Continued from January, 1932 issue, page 60)

1930

26—Charters, W. J., D. D. S.: An ideal method of stimulating the gums and cleaning the teeth, in: Dent. Survey, xx(10): 38-41. Oct., 1930.

Man in changing from a natural environment uses his teeth with less vigor and hence lowers the vitality of teeth and periodontal tissues to disease. A brushing technic to counteract the lack of function is necessary. Brushing by the author's method will not cause recession of the gingiva but will make it hard and resistant. If the interproximal gingiva is lost so as to leave a concavity, surgery is necessary to remove labial and lingual gingivae and process to the level of the interproximal, so as to make the interproximal area accessible to brushing.

The author's brushing method is as follows:

"Place the brush at right angles to the long axis of the teeth, then gently force the bristles between the teeth, being careful not to pierce the gums, that is, do not allow the points of the bristles to touch the gums; then with the bristles between the teeth, exert as much pressure as possible, giving the brush several slight rotary or vibratory movements, causing the sides of the bristles to come in contact with the gum margin, producing an ideal massage. Be careful not to make this movement sufficient to remove the bristles from their position.

"After making three or four small circles, remove and replace the brush in the same area; make three or four applications in the same place. The reason for this is that the points strike the labial, buccal and lingual surfaces, then slide into the interproximal spaces. Move the distance of one embrasure, and repeat the same process holding the sides of the bristles on the gum margin. The V shaped space between the teeth assists in crowding the sides of the bristles against the gingivae or gum margins. Be sure to enter every embrasure or space between the teeth from both inner and outer surfaces on both upper and lower teeth. Lastly, do not brush the chewing or grinding surfaces with a sliding or sweeping motion, but place the brush directly upon this surface, giving a slight rotary movement, after gently forcing the bristles into the pits and fissures. Remove and repeat until the entire chewing surface has been cleaned."

—*H. J. L.*

27—Iden, Eugene W., D. D. S.: Ulotropsis or gum massage, in: Dent. Digest, xxxvi(12): 789-791. 1930.

The author marvels at the brief mention and scarcity of praise given to dental massage, hence studies this subject singly as *ulotropsis*,—"that science of massage which embraces a systematic manipulation of the gum tissues, and may be defined as the principle of imparting or maintaining gum vitality or animation by means of a systematic gum massage." This method has two results, (1) maintenance of the healthy gums in continued health; and (2) restoring unhealthy gum tissue to normal condition. A proper use of this method embraces no less than five (5) movements:

1. digito-uletic expression, or efferent massage, using one index finger buccally and the other lingually;
2. digito-uletic compression, to flatten hypertrophied gum and alveolar tissue and relieve hypertonic conditions;
3. indexo-uletic friction, used to stimulate circulation, relieve nerve tension and invigorate lymphatic system;
4. indexo-dental, or dento-frictional massage,—the teeth receiving the action of the massage;
5. digito-uletic pétrissage,—a pinching or squeezing manipulation to plump out or make firm flabby gum tissue.

In conclusion the author quotes from J. P. Buckley (Modern Dent. Mat. Med., p. 254):

"Massage is employed in dentistry for both its local and systemic effects, in neuralgia, *pyorrhea alveolaris*, and edema resulting from alveolar abscess and other conditions."

—*H. A. R.*

28—Johnson, C. N., L. D. S., D. D. S.: **Brushing the teeth,** in: J. Am. Dent. A., xvii: 2144-46. Nov., 1930.

A radio talk for the public. The author says that people brush teeth to make them white or to prevent decay. Should also brush the gums to keep them firm and healthy. Advocates a sweeping rotary stroke downward on uppers and upward on lowers for massage and cleansing embrasures. Thinks crosswise brushing or brushing against the gum margins causes recession. Three minutes should be spent on brushing after each meal. Tooth pastes and powders have a certain value in aiding the cleasing action of the brush.

—*H. J. L.*

Supplementary 1927

29—Miller, Samuel Charles, D. D. S.: **The toothbrush in preventive and curative dentistry,** in: Dent. Digest, xxxiii (12): 873-5. Dec., 1927.

A description of the toothbrush method of Stillman and McCall for the "physical culture" of the gingivae. The brush is laid flat on the teeth and gums with bristles pointing toward the apices of the roots. The brush is then slightly rotated with pressure, bringing the bristle ends down toward the crowns of the teeth. At the same time, the handle is moved slightly back and forth ("shimmy" motion) to drive the bristles into the embrasures. A solution is used into which to dip the brush made from the Prinz formula; it contains sodium chloride one pound, calcium oxide 100 grains, menthol 15 grains, saccharin 7 grains, pheno-phthalein 2 grains. A teaspoonful is dissolved in a full glass of water. The solution is a mucin solvent.

—*H. J. L.*

(h)—Vincent's Gingivitis

(Continued from January, 1932 issue, page 82)

1930

73—Albray, Raymond A., D. D. S.: **Some of the more serious aspects of Vincent's disease,** in: Bulletin First District D. S. of N. Y., x(3): 1930. Jnl. Dental Res., x(1): 106-7. Feb., 1930. (Abs.)

Vincent's disease is a virulent infection causing intense suffering, having possibly serious consequences to the patient and being communicable to others. It occasionally results fatally in patients having lowered resistance, leukemia, pernicious anemia and leukopenia. Several cases cited in illustration.

The disease is characterized by the presence in the smears of large numbers of Vincent's spirochetes and fusiform bacillus. These organisms not only are present in undoubted cases of the disease but are not found in perfectly healthy mouths. This opinion is held despite assertions to the contrary by many authors.

The symptoms, often not severe even in acute cases, rapidly diminish as conditions develop into the sub-acute or chronic type, when there is special danger of passing the infection to others. This is evidenced by the spread of the disease in armies, colleges and hospitals.

In the treatment, salvarsan is used both locally and by intravenous or intra-muscular injection, in addition to routine sanitive measures. For local application salvarsan is used in powder form, packed into interdental spaces and pockets.

74—Baughman, Leo M., Ph. G., D. D. S.: **Simplicity of medicinal therapeutics in dentistry,** in: Pac. Dent. Gaz., xxxviii: 146-61. 1930. Vincent's infection, pp. 152-54.

Chronic form treatment: Removal of all irritants, followed by daily application of sodium perborate paste, allowed to remain ten to twenty minutes. Home care—mouth wash of sodium perborate every three hours. If fusiform bacillus persists after elimination of spirillae, daily application of ten per cent copper sulphate for at least ten minutes is advocated.

Acute form treatment: Following cleansing of mouth with hydrogen peroxide, apply neo-salvarsan in glycerine allowing to remain twenty minutes. Or, following cleansing, dry pockets and apply ten per cent chromic acid, let remain one minute followed by washing with hydrogen peroxide.

Home treatment in either case: commercial hydrogen peroxide and water equal parts, every three hours.

—*A. G. J.*

75—Brownell, L. G.: **A report of research work in the treatment of Vincent's angina,** in: Pac. Dent. Gaz., xxxviii (8): 515-520. Aug., 1930.

Author gives a definite and comprehensive treatment for Vincent's. Chief medicaments used are five per cent neo-arsephenamine in twenty per cent glucose solution and five per cent copper sulphate in glycerine. Home medication—sodium perborate, sodium benzoate and salt in water, flavored, followed by topical application of three per cent neo-arsephenamine.

—*A. G. J.*

76—Byrnes, Ralph R., D. D. S.: **Vincent's infection,** in: Dent. Cosmos., lxxii: 969-975. Sept., 1930.

Vincent's spirochetes and fusiform bacilli can not be regarded as normal inhabitants of the mouth and the writer believes that the disease is caused by the presence of these two organisms. Contributing causes are malnutrition, lack of hygienic care of the gums and teeth, accumulations of tartar, malocclusion, faulty bridges, inlays, and fillings, excessive smoking or drinking, caries and partially erupted, twisted, or malposed teeth. Treatment consists in applying 7% Chromic Acid to the lesions once a day and the home use seven or eight times daily of full strength

commercial hydrogen peroxide or sodium perborate held in the mouth 3 or 4 minutes.

—*M. M. B.*

77—Cummings, George O.: **Vincent's infection,** in: New Eng. Jnl. Med. Apr. 17, 1930. Abs. J. Am. Dent. A., xvii: 1187-1188. June, 1930.

The field of therapy in Vincent's infection is covered by this author in report based upon 150 cases. The use of prescriptions containing mercuric chlorid combined with hydrogen peroxid, is condemned because of the fact that there are so many other less poisonous antiseptics available. Mercurochrome in a 10% solution is considered of some avail in early mild cases. Metaphen may be employed in an alkalized 1:500 solution to flush out the gingival sulci and is also considered of value as a mouthwash and gargle in a 1:5000 solution. Silver nitrate should not be used about the gums as it is apt to stain the teeth permanently. Silver proteinates are practically valueless; and copper sulphate is apt to stain the teeth.

Zinc sulphate in weak solution has nothing to recommend it except its astringent properties.

Bismuth tartrate in a 30% emulsion has been used as a topical application.

Hydrochloric acid in weak solutions has sometimes been used about the gums, but is likely to injure the enamel of the teeth.

Tincture of iodine is of little value.

Hydrogen peroxid is beneficial as a mouth wash and gargle as it "bubbles away" necrotic material.

Potassium permanganate has been used in weak solution as a germicide, but it has little to recommend it.

Sodium perborate acts as a germicide and "bubbles away" débris.

Many drugs of the phenol group give antiseptic qualities to mouth washes and gargles.

Hexylresorcinol may be employed full strength to flush the gingival sulci, or may be used as a mouth wash or gargle. The use of trichloracetic acid as an escharotic or in solution is not to be recommended.

Chromic acid is best applied in a solution from 2 to 10 per cent but should not be used in excess because of the effect on the kidneys.

The use of mouth washes and gargles containing arsenic are to be condemned because there are less poisonous washes that are just as effective.

Arsphenamin has been used, a 10 to 15 per cent solution in glycerin as a topical application and its various forms have been used intra-venously. This drug in its different forms and methods of application the author considers the "sheet anchor" in the treatment of Vincent's infection. An intravenous injection of 5 cc. of a 1% solution of antimony and potassium tartrate has been advocated and might be worth remembering in a stubborn case that has not yielded to arsphenamin and local treatment.

Ipecacuanha is of no value in this disease.

The many analin dyes that have sometimes been used may permanently stain the teeth.

Acriviolet or neutral acriflavin are sometimes used for their antiseptic qualities. Potassium chlorate is to be considered for its astringent qualities.

As to treatment, when constitutional symptoms are present, the patient should be put to bed and treated as in any other acute condition. Cold or hot packs can be used on painful or swollen jaws. Mouth washes containing an astringent and a non-irritating antiseptic may be used for the comfort that they afford the patient. Topical applications are of value only in the mild cases, as the disease condition is in the gingival sulcus which should be flushed out with a syringe having a blunt pointed needle set at an angle with the long axis of the syringe. For flushing, 1:500 solution of metaphen, or hexylresorcinol is preferred to a 15% solution of arsphenamin in glycerin. Most cases taken early will clear up within a week if this treatment is used daily. Treatment is supplemented by the home use of sodium perborate on pledgets of cotton and as a dentifrice. Toothbrushes should be sterilized and the teeth should be scaled after symptoms of the infection have disappeared. The author advocates the use of arsphenamin intra-venously when more conservative methods have failed.

78—Daley, Francis H., D. M. D., Boston, Mass.: **History of Vincent's infection,** in: J. Am. Dent. A., xvii(10): 1854-59. Oct., 1930.

A review of the most important literature on this subject since Miller first described the organisms present about 1880. About three hundred references are listed.

—*H. J. L.*

79—Daley, Francis H., D. M. D.: **Etiologic factors in Vincent's infection,** in: J. Am. Dent. A., xvii(11): 2039-2041. Nov., 1930.

The etiologic factors in the production of Vincent's infection can be classified into two groups; (1) local or direct irritation from within the oral cavity itself; (2) remote or indirect irritation from some tissue or organ of the body which predisposes the oral mucous membrane to infection by lowering its resistance.

The author observes that in the first group, causes may be improper hygiene, calcific deposits, ill fitting crowns, imperfect fillings, broken down roots or improper restorative appliances.

In considering the remote factors predisposing to Vincent's infection, we are especially concerned with those diseases which tend to be chronic or obscure. Some of the more prominent diseases which come under this classification are tuberculosis, syphilis, diabetes, various types of nephritis, various fevers and febrile conditions. Pregnancy is a factor which should not be overlooked. Occupational diseases, especially metallic poisoning, must be considered, Acidosis, particularly of the digestive tract, may be a factor. Constipation is probably one of the most important conditions contributing to a lowered resistance.

—*H. H. C.*

80—Daley, Francis H., D. M. D.: **Vincent's infection; smearing & staining technic,** in: J. Am. Dent. A., xvii(12): 2227-2228. Dec., 1930.

The technic as described appears to be common practice.

—*H. H. C.*

81—Dyment, Murray L., D. D. S. (Toronto): **Dental formulae,** in: Oral Health, xx: 543-50. Oct., 1930. Brit. Jour. Dent. Sci., lxxvi(1363): 156-163. July, 1931.

The author recommends for use in gingivitis, "*mallophene.*" This product is available as a dusting powder, also as soluble discs. Also a modified Talbot's solution (zinc oxyd, water, iodine crystals, in a glycerine solution.) For *Trench Mouth,* or *Vincent's infection* he advocates the use of the Adams' iodine, silver nitrate combination described by Box (Bull. 14, p. 47 Canadian Dent. Res. Fnd; Churchill's tinct. of iodine; and a 35% aqueous solution of silver nitrate). Further he recommends the sodium perborate mouth wash; or dental neo-arsphenamin may be used in combination with metaphen.; also the varnish of 25 grains of gum copal dissolved in 100 minims of alcohol.

—*H. A. R.*

82—Freeman, Nathaniel, D. D. S.: **Vincent's infection,** in: Dent. It. of Int., lii(4): 280-284. Apr., 1930.

An excellent practical article on the etiology, diagnosis and treatment of this disease. The author distinguishes between Vincent's infection (confined to mouth) and Vincent's angina (the throat lesion). The organisms (B. fusiformis and spirochete living in symbiosis) are described. These organisms can be cultured anaerobically upon slants of ascitic agar at 37.5° C. Up to the fifth day of infection, bacilli only are found; after this time spirochetes appear and gradually become predominant. The author thinks it is proved that the two organisms are not just two forms of one. When they are the cause of the disease, smears show them almost exclusively; but their mere presence is not necessarily indicative of infection.

Vincent's infection is contagious and one attack confers no immunity. The diagnosis is made on the basis of gingival appearance, subjective symptoms and microscopic examination, especially the last two, The usual local and systemic symptoms are described. Methods of differentiation from mercurial, arsphenamin, and bismuth stomatitis, and ulcerative secondary syphilides are given.

The presence of the organisms under hypertrophic gingivae may be misleading. Acute lymphatic leukemia may cause gingival symptoms similar in appearance to Vincent's infection. The organisms are frequent residents of the mouth and grow in pyorrhea pockets and other areas where necrotic débris is present and oxygen reduced. The method of taking and staining a smear is described.

The author believes that Vincent's is a mixed infection and not simply confined to the surface. Predisposing factors are usually present as a neglected mouth, a diet new to the patient, and cigarette smoking. Fatal complications due to intercurrent streptococcal septicemia or extension of Vincent's infection to the lung, middle ear or other

regions may occur. Prognosis is favorable if toxemia is not too severe.

Treatments found useful in the author's hands are given; in principle these are for home treatment, (1) to discontinue toothbrushing; (2) absolute prohibition of tobacco, alcohol, spices and acids; (3) light diet; (4) 8 oz. orange juice daily; (5) oxidizing mouth wash (two prescriptions given); (6) use of mild saline cathartic; (7) aspirin for pain; (8) care to protect others from contagion.

For office treatment (1) wash off slough, or with spray, using tincture of green soap, and rinse; (2) block off saliva and apply dry sodium perborate powder to ulcerated surfaces. Allow to remain 5 min., rinse and reapply; or, apply neo-arsphenamin powder or ten per cent solution of the same in glycerine; or, apply chromic acid (8% sol.) followed by compound tincture of benzoin. Hospitalization is necessary in the severe toxic cases, as is also systemic medication with salvarsan given intra-venously. The frequency of office treatment depends on the severity of case. Extractions and other surgical procedures should be avoided until acute symptoms have subsided. After healing of the tissues, thorough scaling and polishing of the teeth should be given.

—*H. J. L.*

83—Giese, C. O., and A. Lee Briskman: **Treatment of 500 cases of Vincent's disease with review of literature,** in: Colorado Medicine, xxvii: 374-80. Oct., 1930. Brit. Dent. J., lii(1): 225. Mar., 1931.

Treatment of 500 cases of Vincent's infection is reported by these authors. Poor results in the treatment of several cases at a union printer's home led to the making of mouth smears of everyone connected with the home. The percentage of those found infected was 93.5. Preliminary to treatment all toothbrushes were discarded and each patient was given a bottle of 2% sodium perborate solution with instructions to use it every two or three hours. Later, selected cases were given a mouth wash consisting of equal parts of hydrogen peroxid and saturated solution of potassium chlorate diluted with equal parts of water. Each patient received daily treatment from the dentists in charge, consisting of spraying of the gingival margins with a solution consisting of glycerin 40 parts; wine of ipecac, 24 parts; solution of potassium arsenite, U. S. P., 40 parts, and hydrogen peroxid to make 480 parts. Also the gum margins were painted with a 7% solution of chromic acid. Smears were taken on the fifth and tenth days, and those patients showing definitely positive reactions on the tenth day were given injections of either neo-arsphenamin intra-venously or bismuth intra-muscularly. The authors conclude that Vincent's organisms are present in practically every mouth. Treatment must be persistent until smears become negative and remain negative even though symptoms have disappeared. The organisms are not found in the edentulous. Early cases may show no signs and the symptoms may be very slight. The infection in association with syphilis is most difficult to cure. Destroying one of the organisms will not cure the disease. Suspected cases of pulmonary TB with a persistently negative sputum and atypical chest findings should be suggestive of Vincent's. A negative diagnosis can never be made by inspection alone. It is important to keep the mouth alkaline. Potassium chlorate mouth wash is a specific for the fusiform bacillus. In 83% of cases that were still positive after injection of neo-arsphenamin, reaction became negative with one injection of bismuth, 3 grains at a dose.

"To those who imagine that Vincent's angina or ulcerative stomatitis is an easy disease to diagnose, it may come as a shock to find that according to Drs. Briskman and Giese there are no fewer than fourteen diseases which might be mistaken for it. These writers emphasize the fact that there are fallacies in the diagnosis of this disease which it is important to guard against. Some of the diseases named are not likely to be mistaken for ulcerative stomatitis, but the possibility of certain blood disease being wrongly diagnosed with disastrous consequences should be borne in mind. It is interesting to find that routine smears from the mouths of all persons at a large institution showed that over 93 per cent had spirochetes and fusiform bacilli present. But the existence of these organisms was entirely dependent on the presence of teeth, for in all edentulous persons the mouths were quite negative."

84—Hentze, Prof. Dr. Albin F. (Kiel, Ger.): **Vincent's angina:** in article entitled "Inflammation of the mucous membrane of the mouth," in: Die Fortschr. der Zhkde., vi(1): 615-32. Aug., 1930. Abs. Dent. Digest, xxxvi (11): 736. 1930.

Vincent's angina is seen in two forms, the ulcerous and the pseudomembranous. The latter is distinguished from the former essentially through its severity, location of the lesions and the blood picture.

The ulcerous form is not severe; the patient goes about normally. A deep crater-like ulcer may develop on one of the tonsils with a yellow or gray-green coating. There may be other ulcers on the gums and uvula. The regional lymphatics are noticeable and sensitive. The ulcers disappear slowly, usually after two or three weeks.

The pseudomembranous form of Vincent's angina shows itself as a far more serious infection. Sore throat with difficulty in swallowing is manifest, together with high fever, headache and inability to work.

Both tonsils are reddened and swollen and covered with a dull gray film. All regional lymphatics are enlarged and tender. There is an increase in the leukocyte count. After one or two weeks the symptoms subside, but the patient is anemic and weak for a long time.

In both types of Vincent's we have a lymphatic involvement. This is similar to the picture in lues and it must be remembered that in both cases a spirillum is the causative factor.

Vincent's infection was first discovered by Miller, and it must always be borne in mind that these bacteria may be frequently found in normal healthy mouths.

—*Copy.*

85—Hirschfeld, Isador, D. D. S.: **Vincent's infection:** its clinical aspects and treatment, in: Bull. 1st Dst. Dent. Soc., N. Y., x(7): 1930. Abstract Jnl. Dent. Res., x(1): 107-8. Feb., 1930.

Recognition of the different types of Vincent's infection is very important. While the classical picture of the acute form is definite and readily distinguishable, there are variations in the number and combination of clinical symptoms, some of which simulate other forms of gingivitis or gingival symptoms of systemic disease. When in doubt, the result of a 24 hour test of anti-Vincent treatment will assist in making a differential diagnosis.

Symptoms of incipient Vincent's infection fall under the following headings (1) Apparently spontaneous interproximal hemorrhage without abnormal redness of gingiva. (2) Inflamed apices of papillae which bleed easily but are not tender. (3) Same as (2), plus tenderness, but without sloughing. The stereotyped description of Vincent's infection refers to interproximal destruction, but this is not an invariable symptom.

Vincent's infections may be classified under three headings: Acute, subacute and chronic. These are not invariably distinct entities; cases may merge from one to the other or present conflicting symptoms.

The treatment advocated is not new, but if properly executed gives most satisfactory results. Necrotic gingival tissue is wiped off with a cotton wrapped toothpick dipped in a ten per cent solution of neo-arsphenamin in glycerin. The patient uses sodium perborate as a mouth wash—one teaspoonful to three-fourths of a glass of water, used every half-hour until otherwise instructed. A cathartic is advised, also rest and light corrective diet. Smoking is prohibited temporarily. A ban is placed on spicy foods and alcohol. Tooth brushing is discontinued during the acute stage. At the second visit the topical application is repeated; at the third visit all gross deposits of calculus are removed. Brushing is commenced as soon as the gingivitis has been reduced. Occasional visits are required for some time, to induce the patient to keep up correct hygiene and function.

—*Copy.*

86—Kochman, Harry A. and Max Hammer: **Vincent's infection;** a scientific consideration of this disease and logical treatment, in: Items of Interest, lii: 770-77. Oct., 1930.

Today we find this condition among men and women of all walks of life. Also numerous positive diagnosis have been made in children even at the age of 1 or 1½ years. Among children that are undernourished or where there is faulty metabolism there seems to be a predisposition to this condition.

Tunnicliffe claimed that the fusiform bacillus and the spirochete are only different forms of the same organism. Today

an opinion is prevalent that the bacillus is in realty a primitive spirillum.

In children the symptoms somewhat vary from those of adults. As a rule, the gums rarely present any ulcerations. They appear swollen, red and glazed at the gingival borders, and an exudate is discernable. The lips invariably are chapped and the temperature is frequently above normal. The tongue appears "coated," and there is a distinct fetor of the breath. Hemorrhage from the gums is more or less frequent, and can be produced upon the slightest touch. Often a lesion may be detected in the mucosa in the floor of the mouth or on the under surface of the tongue, or in the tonsillar region. Both submaxillary and sublingual glands frequently become enlarged and tender to palpation.

Extraction of teeth, curettage, or even scaling is absolutely contra-indicated at this time. Not only should oral surgery be avoided, because the tissues are so highly sensitive to mechanical irritation, but also the presence of the micro-örganisms in the mouth actively retards healing, and considerable necrosis of tissue may follow such procedure. Relief must be obtained only by symptomatic treatment. The employment of caustics, or astringents must be absolutely avoided.

All mechanical irritation to the gums must be eliminated, i. e., orthodontic applicances, removable bridgework, etc. All coarse foods must be eliminated from the diet as these act as mechanical irritants, and disturb granulations. The patient should be put on a diet of liquids and semisolids until the lesions in the mouth have disappeared. This course of treatment is continued daily until the ulcerations have been completely eradicated.

Germicides used are sodium perborate, acriviolet. Churchill's iodin, silver nitrate (10 per cent solution), and sulpharsphenamin.

The latter is only employed in the treatment of children who are too young to use a mouth wash regularly at home. In such cases it is advisable to have a physician administer the required dosage of sulpharsphenamin intra-muscularly into the upper and outer quadrant of the buttock.

It is of paramount importance that proper elimination be established at all times during treatment.

—*H. H. C.*

87—Lehman, Alexander S., D. D. S.: Vincent's infection, in: Pac. Dent. Gaz., p. 5-9. Jan., 1930.

The author expresses belief that chronic Vincent's is a form of pyorrhea and not related to true Vincent's which is always acute. Questions the specificity of fusiform bacillus and spirillum of Vincent's alone or symbiosis, and doubts that the disease is contagious.

—*A. G. J.*

88—Lennox, Joseph: Vincent's infection, in: Dent. J. Austral., ii: 434-436. Aug., 1930.

Vincent's infection is a mixed infection and not a surface infection because, 1. there is the presence of glandular symptoms, 2. disease recurs after treatment and after smears are negative, 3. death of pulps after treatment, 4. response to general treatment. It is important to make differential diagnosis —this will include diseases as pyorrhea, syphilis, proliferating hypertrophic gingivitis, acute lymphatic leukemia, etc. No positive diagnosis can be made in the absence of subjective symptoms and microscopic examination. Predisposing factors as neglected mouth, carious teeth, inflamed gingivae, improper diet, gingival irritation and cigarette smoking are suggested as etiological factors. Prognosis is usually favorable. The usual home treatment is prescribed and the patient cautioned in the use of separate dishes, glasses, eating utensils and kissing. Many agents for office use are suggested. In severe cases, intravenous injection of salvarsan may be given. No surgery or extraction should be attempted until at least two weeks after symptoms have subsided and smears are negative for Vincent's organisms.

—*S. S.*

89—Marco, B. Barrymore, D. D. S.: Treatment of Vincent's infection, in: Dent. Digest, xxxvi(6): 371. June, 1930.

Vincent's infection has been found in such tissues as the alimentary tract, peritoneum and mucous membrane of the mouth and pharynx. The organisms found in all cases are Vincent's spirochete and the fusiform bacillus. There is a peculiar odor to the breath, and at times there is quite a rise in temperature.

The patient must be instructed to refrain

from smoking and also cautioned against the use of highly seasoned and spicy foods, acids and salt. The diet should consist of eggs, chicken, fish, milk, plenty of spinach, lettuce, cabbage, stewed fruits, and a glass of orange juice daily.

All surface débris is removed from the tissues. Next, the mouth is thoroughly sprayed with a solution of peroxid of hydrogen, one part of water to three parts of peroxid. This is followed with the ultra-violet ray. After that the parts are dried and pieces of cotton saturated with a solution of 5% salvarsan glucose are held in the mouth for ten minutes.

For home treatment the patient uses three times a day, a solution of:

Peroxid of hydrogen, 10 ounces.

Wine of ipecac, 6 drams.

Glycerin, 10 drams.

Fowler's sol., 10 drams.

Aqua pura qs., 16 ounces.

—*J. L. W.*

90—Pitts, A. T. (England): **Place of drugs in dental surgery;** an account of the various ills affecting teeth and the use of drugs appropriate in each case, in: Chem. and Drug., cxii: 448-9, and 479-80. 1930.

A five to even ten per cent solution of chromic acid is used as an antiseptic in ulcerated gums ("trench mouth") after washing with 3% hydrogen dioxide solution.

Dentifrices should be alkalinized to neutralize the lactic acid formed in the fermentation of carbohydrates.

91—Rosenthal, S. Leonard, D. D. S.: **Vincent's infection—an epilog.,** in: D. Cosmos, lxxii: 303-304. Mar., 1930.

One of the chief complaints by dentists against treatment of Vincent's infection is that of recurrence after an apparent cure. This criticism may of course be directed against treatment of any disease which in its course does not induce the creation of the so-called antibodies in the blood stream. Recovery and future protection depends on the establishment of disease resistant tissue.

The first essential is of course oral cleanliness. It is the author's practice to request patients completing treatment for Vincent's infection to return in two months, and thereafter for a time at longer or shorter intervals as the need may appear.

The gingival tissues themselves, Rosenthal believes, are best strengthened and kept healthy by massage. The object of massage is to bring about increased cell activity by increasing the flow of body fluids and by increasing secretion and excretion. A hyperemia is induced, the blood lymph vessels and lymph spaces are emptied, and replaced by a fresh influx. The ideal implements for massage are the patient's fingers. They are readily cleaned, perfectly adaptable to all angles, can apply all degrees of pressure and are seldom "lost or misplaced." The skin forms an ideal surface for friction being rough enough to supply friction and smooth enough to prevent injury. The patient is instructed to repeat this process again and again for five minutes by the clock each day.

In conclusion, it has been the author's experience that recurrent attacks of Vincent's infection may be eliminated to a great extent by (1) regular and frequent prophylaxis and examination; (2) diet and attention to general health; (3) daily massage of the gums.

—*H. H. C.*

92—Talbot, W. O., D. D. S.: **Trench Mouth,** in: Texas D. J., xlviii(2): 1-7. Feb., 1930.

Dr. Talbot describes the diagnostic symptoms of Vincent's, both acute and chronic, and gives a general description of the disease. He suggests that the fact that the spirillum may be found without the bacillus, in chronic cases or where treatment has supposedly cured but with a slight gingivitis remaining or recurring, indicates that the spirillum is the more stubborn factor to overcome and that the bacillus is the more active agent in producing the ulceration.

The underlying principles upon which proper treatment is based were given as expressed by Hirschfeld as: "(1) Elimination of the bacterial element; (2) the raising of the general resistance; (3) the removal of traumatizing agencies which tend to lower the local resistance; (4) the promotion of local immunization to ward off reinfection."

The writer mentions all the various treatments that are commonly in use, then gives his personal preference and the treatment which he usually carries out. At the chair he uses dioxogen, hexylresorcinol solution as

rinses, then treates with 5% solution of salvarsan. The patient is instructed to use 20% solution of dioxogen as mouth wash every two or three hours, to be followed by a 10% solution of Fowler's solution of arsenic which should be held for two minutes. Raw ulcers are touched with 10% solution of silver nitrate or trichloracetic acid.

—*S. R.*

A good article on Vincent's infection, giving incidence, method of transmission, predisposing causes; symptoms, bacteriology, and various well-known treatments. The author notes a new preparation, bismuth sodium tartrate in glycerin solution for topical application and an aqueous solution for intra-muscular injection.

—*H. J. L.*

93—Wagener, Edna H., A. B., A. M., McEvoy, Taber & Curley: **The laboratory diagnosis of Vincent's infection,** in: J. Dent. Research, x: 591. 1930.

Experiments were undertaken to determine "when is a smear to be considered positive for Vincent's infection and when negative." The authors report that the fusiform bacilli were found by Pratt to be present "without exception in two hundred normal mouths" and that in their own findings they were practically always present.

Direct smears taken from cases of Vincent's infection "contained several species of spirochetes, fusiform bacilli and cocci. The relative members of each of the organisms varied in smears from different parts of the mouth. Along the gingiva and in chronic cases of Vincent's infection, cocci and thick crescent-shaped fusiform bacilli predominated. In acute Vincent's infection, and in deep necrotic pockets, the predominating organism was *Treponema Vincenti.*"

The report is concluded by the statement that they considered their "laboratory diagnosis of Vincent's infection positive only when *Treponema Vincenti* is found as the predominating organism."

—*A. H. M.*

94—Weber, Rudolf.: **Ueber eine besondere Form der Paradentitis, die "nekrotisierende" Paradentitis,** in: Zahnärztliche Rundschau, 2: 55-58. 1930. Abs. D. M. f. Z., xlviii(19): 1314-1315. Oct., 1930.

Author reports observations in five cases, of inflammatory paradentoses (paradentitis); an ulcerous gingivitis (fuso-spirochetosis) which leads to suppurative disintegration of the gingivae and finally to loss of the teeth. These clinical pictures in the author's opinion prove that the spirochetes and fusiform bacilli develop a pathogenic activity of their own when the soil is prepared for them. These cases show that the local factors in the genesis of paradentitis must not be overlooked.

—*Transl. from article, H. A. R.*

95—Witte, F. W., D. D. S.: **"A report on 202 cases of Vincent's infection,"** in: Dent. Digest, xxxvi(1): 454-458. July, 1930.

On January first, 1930, an epidemic of Vincent's began in Morenci, Arizona, a copper mining camp, having a population of about 7,000, of whom approximately 60% were Mexicans.

Under great difficulties, due to squalor and environments such as might be found in a camp comprised of so high a percentage of foreign labor element, the author tells about measures resorted to in bringing about a successful extermination of the disease, with which 202 school children were affected.

Description of treatment, both active and post-operative, including use of several prescriptions, with statistics carefully recorded, giving ages and number of treatments required, are included in the report.

—*C. M. G.*

96—Wright, William T., Jr., D. D. S.: **Vincent's infection,** in: J. Am. Dent. A., xvii: 1294-9. July, 1930. Abs. D. Cosmos, lxxiii(2): 202. Feb., 1931.

The importance of the use of the microscope cannot be too strongly stressed in making a diagnosis. Wright draws a distinction between a "positive" smear and an "active positive" smear. In a "positive" smear, both fusiform bacilli and spirochetes are present. The fusiform bacillus stains uniformly. In an "active positive" smear, both organisms are present, and some of the fusiform bacilli take a metachromatic or beaded appearance, when a 2% gentian-violet stain is used. He has found this beaded-appearing organism

always present in smears of either acute or chronic infections, although they are present in greater numbers in the acute cases.

All patients reporting to the U. S. Marine Hospital, (Baltimore, Md.) for the removal of impacted teeth, especially third molars, were treated with a 2% solution of chromic acid to be used three times in 24 hours prior to the operation. The tissues of patients so treated healed more readily than the tissues of those not so treated.

—*Copy.*

(i)—Miscellaneous

(Continued from January, 1932 issue, page 88)

1930

18—Barker, Lewellys F., M. D.: **Function of the dentist in preventing metastatic infections from primary sources of infection in the mouth,** in: Journal of Medicine, xi: 229-241. July, 1930.

This valuable paper should be read by every dentist. The author, a distinguished member of the medical profession, calls attention to the responsibility of the dentist and the physician and the urgent need for coöperation between the two in the prevention and treatment of disease. He says focal infection has been over-emphasized, it has been carried farther than the truth warrants, so that it has been necessary to combat the serious abuse of the conception of the relation of focal infection to other disorders. He does not approve of the indiscriminate extraction of teeth, even pulpless teeth, when there is no definite reason for condemning them. If there is no evidence of infection of a tooth it should be retained. Blood-stream infections and distant metastatic infection may arise from a primary focal infection situated in any one of many sites in the body, such as the gums, the tissues about dead teeth, the tonsillar tissues, paranasal sinuses, gall bladder, the veriform appendix and the urogenital tract. It is essential that a general comprehensive diagnostic survey be made and when foci of infection are found removal is part of the general plan of therapy. He criticises some physicians for not paying sufficient attention to the significance of oral sepsis. Frequently in treating arthritis or secondary anemia no attention is paid to abscessed teeth or pyorrhea alveolaris. This is not due to a lack of knowledge but failure to make a systematic diagnostic examination so that factors like abscessed teeth and suppurating gums are overlooked. In considering the prevention of pyorrhea alveolaris he states that it is most important that attention be paid to the quality of foods eaten, that sufficient foods of a fibrous type be taken, especially after sweets or cooked starches are ingested.

—*J. C. S.*

19—Blanquie, Raoul H., D. D. S.: **Status of periodontia in dental education and practice,** in: Dental Cosmos, lxxii(1): 64-66. 1930.

It is generally conceded that periodontia is a major branch of dental science in that it deals with the safeguarding of the basal support of the teeth as well as with oral pathology. Yet the dental colleges of the country have given but very little additional time in their curriculum to the study of this branch despite the lengthening of the course to five years. This deficiency has led to many errors in practise and has been responsible for:

(1) the encouragement of patent medicine manufacturers purporting to benefit periodontal diseases and playing a safe game by advising the patient to seek a dentist.

(2) the belief, by many dentists, that there is no help for periodontal disease thereby causing the needless sacrifice of hundreds of teeth.

(3) Lack of knowledge by physicians.

—*W. Y.*

20—Elander, Karl (Sweden): **Das Namensproblem der Pyorrhöe,** in: Tandlaegebladet (5): 1929. Abs. Z. Stomat. xxviii(7): 668. July, 1930.

The various names chosen for alveolar pyorrhea very thoroughly discussed from the technically important side as well as that of the etymological. The author advocates "Panodontitis" but thinks it not sufficiently pliable in compounds; hence his final choice is "pyorrhosis," with its kindred words, pyorrhotic, pyorrhology, pyorrhoimmunity and the like.

—*H. A. R.*

21—Raymond, Franzen: **Public health aspects of dental decay in children,** in: Am. J. Diseases of Children. June, 1930.

This is the third monograph in the school health Research Series, and deals with the analysis of the mouth records of 7,500 chil-

dren of the fifth and sixth grades, as well as several thousand children of lower ages. The six chapters are divided into the measureable aspects of oral hygiene, the continuity of decay, the effects of fillings on dental decay, the relation of enamel defect to school health policy, stain, tartar, and gingivitis and the application of the conclusions to the problem of dental influence. In all of these aspects the idea has been to develop a standard for measurement, so that individual comparisons may be formulated into one standard. This will be contributory to the development of an evaluation formula which in the final volume of the series can be applied to each of the school groups that have been studied.

—*C. R.*

22—Frey, Dr.—— (Dr. Pub. Hlth., Berlin): Die bedeutung der Paradentose für die öffentliche Gesundheitspflege. The importance of paradentosis on the promotion of public health, in: Paradentium ii(4): 98-103; in: Z. Rdsch., xxxix(32): Aug., 1930.

The dentist seems to be called with the internist to play a worthy part in public hygiene and public economics in the struggle against paradentosis. Dr. Frey stresses the importance of early diagnosis. In school children by means of dental clinics mouth infections may be prevented, errors of diet may be corrected, and later industrial injuries forestalled,—especially through training in individual hygiene of the mouth and teeth by use of proper cleansing agents, paradentosis may be warded off, and pain avoided to a great extent. All this may be accomplished especially if the organizations of public health can engineer and support such activities.

Cases in which there is predisposition to paradentosis can be cured by early treatment in the incipient stages of the disease; catastrophic injury to the dentures may be saved; the masticatory function and working capacity of the individual lengthened over many years. In this rational treatment, the workingmen's Sick Funds coöperate in their own interest, in order to escape the high costs due to incapacitation by tooth loss and prosthetic restoration.

—*Transl. H. A. R.*

23—Guy, William, F. R. C. S., L. D. S., F. R. S. E., L. L. D.: Dentistry in relation to tuberculosis, in: Dental J. of Austr., 262-266. May, 1930.

This is however not a dissertation on tuberculosis. The author stresses the treatment and if possible the elimination of conditions tending to lower the resistance of the individual to invasion of infective organisms, one of the commonest of which, especially prevalent in children is disease affecting the teeth and oral tissues. He cites Dr. Johnston of Birkenhead, who in a recent paper on *"Hilus Tuberculosis"* states that in an examination of 1,918 children he found 27.7% having defective teeth, along with other evidences of tuberculous infection. Dr. Guy advises occasional, if not habitual, consultation and collaboration between dentist and physician.

24—Helmerich, E.: The relation between dentition and fever, in: Arch. f. Kinderh, 88: 39. Aug., 1929. Am. J. Dis. of Children. June, 1930.

Helmerich, from data and case reports collected at the University of Wurzburg during the past twelve years, concludes that there is no connection between dentition and fever. He arrives at this conclusion by observing the absence of fever in many carefully observed infants during teething. The frequency of the two conditions in infants makes them coincidental in many cases.

—*Sanford, Chicago.*

25—Jaccard, René (Geneva): Terminologie des pyorrhées. Terminology of pyorrhea, in: Schwz. Mschr. f. Z., xl: 661-672. Nov., 1930.

Jaccard's article gives an exhaustive review of names and opinions as to the proper designation for pyorrhea. He cites Roy and follows Roy's error in regard to the term *"periodontia"* which both believe to be used in America as a tentative substitute for the term "pyorrhea alveolaris."

26—Lancet, Benjamin M., D. D. S.: Relationship of occlusion to the molar biting pressure, in: Dental Outlook, xvii (4): 139-145. April, 1930.

For the purpose of investigating the relationship of occlusion and the development of the facial musculature, the author used

a Molar Dynamometer, thus obtaining the readings of the biting power in the region of the first permanent molar. He says that a child to be normal with respect to its right molar pressure may have a record anywhere between 37.11 kilos and 54.39 kilos. The average is 45.75 kilos and the standard deviation is plus or minus 8.64 kilos.

He states further that the abnormal molar pressures are the same as the normal until thirteen years of age and from that time on the normal becomes relatively greater. The abnormal type of occlusion that is observed from the time of the eruption of the teeth manifests its deleterious effects upon the masticatory apparatus in the course of a period of ten years. The male has greater molar pressure average on each side than the female. The right and left sides of the male are almost alike; the same is true of the female.

—*J. C. S.*

27—Lufkin, A. W., D. D. S.: **From Riggs disease to periodontoclasia,** in: Pac. Dent. Gaz., 65-74. 1930.

A review of literature on alveolar disease, opening with an interesting excerpt from M. Bourdet (Paris) 173 years ago which rather startlingly resembles some recent methods of "débridement." Due to divergent individual opinions on etiology advocates formation of capable research group with ample finances and time.

—*A. G. J.*

28—Merritt, Arthur H., D. D. S.: **The economics of periodontia,** in: J. Am. Dent. A., xvii(5): 823-827. May, 1930.

Before considering the economic problem of periodontia, we must stress the importance of educating the dentist and the public to the true worth of periodontia. The responsibility rests on the dental profession, which can reach the public through the press and in many other ways. Knowledge is the only antidote for ignorance.

Considering all classes of patients, it is true that neglect costs more than treatment. An efficient operator renders the maximum of service in the minimum of time, and his fee is for the service. Unfortunately, there are still many dentists practicing who are inefficient and unscrupulous. However, when periodontia is practiced efficiently and honestly, treatment is within the reach of all. The satisfactory solution to the economic problem in periodontia is prevention.

—*C. J. C.*

29—Merritt, Arthur H., D. D. S.: **The general practitioner's responsibility in the prevention of periodontoclasia,** in: J. Am. Dent. A., xvii: 2308-12. Dec., 1930.

Slight inflammatory conditions about the gingiva which are easily treatable, tend if untreated, to develop into serious periodontal lesions. Neglect of these initial lesions by practitioners of dentistry constitutes the outstanding failure in dental practice today. Bacteria and lowered resistance of periodontal cells are the two factors directly responsible for periodontal lesions; other factors such as nutrition, endocrine disturbance, oral sepsis, food impaction and occlusal trauma act through these two. The first step in prevention is a thorough dental examination including radiographs. The slightest departure from normal in the gingiva should be investigated and corrected. Inquiry into general health and nutrition is necessary, usually followed with dietetic advice. The teeth should be thoroughly cleaned, polished and freed from irritating roughnesses. Home care must be carefully taught, including instruction in tooth brushing for cleanliness and gum massage with use of vibratory technic; also instruction in mastication of food. The patient should be supplied with proper tooth brushes, waxed silk tape and prescription for a dentifrice. Thorough prophylaxis from two to four times a year should follow this treatment.

If coöperation is not given, early symptoms may lead to periodontal lesions requiring treatment; such treatment is always less preferable than prevention. Occurrence of advanced lesions necessitating the care of a periodontist means neglect on the part of either patient or dentist.

—*H. J. L.*

30—Neustadt, Egon, M. D.: **The orthodontist's responsibility in the prevention of peridental disease,** in: J. Am. Dent. A., xvii(7): 1329-34. July, 1930.

The major idea in the mind of a patient who presents himself to the orthodontist is the matter of having his teeth straightened. Rarely do we find him with any other idea.

Very little work has been done by the

orthodontist along the lines of preventing peridental disease which is not surprising when one realizes that both orthodontia and periodontia are comparatively new sciences.

The essential factors entering into the etiology of peridental disease are: low resistance, faulty diet, lack of mouth hygiene, the presence of deposits and traumatic occlusion. With the exception of low resistance the orthodontist can, during his treatment, control all these factors and even this he may influence. The necessity of mouth hygiene and cleanliness which stimulates gingival circulation are universally recognized as most important agents in the prevention of peridental disease. The factor of occlusion should be taken up more in detail; for here lies the great opportunity of the orthodontist and at the same time his most important duty. Here he can do more for his patient than just to "straighten his teeth." More time should be spent in getting a balanced occlusion than getting centric occlusion. This avoids excessive stress on one or more teeth, a condition which is called traumatic occlusion. The elimination of contact for the incisors refers only to centric occlusion, and it must be seen to that they have contact in other functional relationships of the jaws. Contact is desirable on as many teeth of the working side as possible. Cusp height and peridental disease are closely related.

It is a fundamental fact that our teeth have an inherent tendency to grow if not stopped by occlusal contact. Cases which lack occlusal balance are the most frequent and most trying that the periodontist is called on to treat. Elongation takes place when molars have no contact and it also takes place when incisors have no contact. In both cases, teeth elongate and if normal conditions are to be established, elongated teeth must be depressed.

—*J. L. W.*

31—Rauh, Sidney J., D. D. S.: **Status of periodontia in dental practice,** in: J. Am. Dent. A., xvii(7): 1235-38. July, 1930.

Though this is an age of specialization it is the author's contention that the public should as in years before first consult the general dentist. Confronted with periodontists, pedodontists, pathodontists, exodontists, orthodontists, prosthodontists, radiodontists, research workers, dental hygienists and dental economists a patient would only by luck be able to approach the one from whom he could receive the desired attention.

A good dentist could specialize in any one of the above fields so why hesitate at consulting the dentist first?

The treatment of periodontoclasia seems to be the most popular form of dentistry at the present. The keynote to success of periodontic operations, which are properly done, is the home treatment or care of the mouth by the patient. Impress upon the patient the importance of the toothbrush, the dental tape and the stimulation of the gums by massage.

Positive coördination between the dentist and specialist will in time make of both necessities and successes.

—*J. L. W.*

32—Rhodes, E., L. D. S., R. C. S. (Eng.): **The paradontal abscess and stereoscopic dental radiography,** in: Brit. Dent. J., li(20): 1121-1122. Oct., 1930.

A short paper in explanation of some excellent radiographs. Four illustrations of paradontal (parietal) abscesses are given with the means of diagnosis and three illustrations of the value of stereoscopic dental radiography in the locating of impacted teeth, cysts and other objects in the bone.

—*H. J. L.*

33—Sherwood, Clyde C., D. D. S.: **How should the general practitioner equip himself for the practice of periodontia?** in: J. Am. Dent. A., xvii(7): 1241-44. July, 1930.

Author sent questionnaire to leading dentists and the paper is an assemblage of selected answers to questions. The answers to Question 1, "Shall the dentist in general practice treat periodontal disease?"—were almost universally affirmative. The field is so intimately related to all dental procedures that it should be included in general practice. Prevention and treatment are not difficult if disease symptoms are recognized and treated early. The only negative answer was based on doubt whether one not devoting himself entirely to this field could maintain the necessary technic. Most answers to question 2, "What, briefly, is your method of procedure in treating periodontoclasia?"—included the following steps: diagnostic procedures, as

roentgenograms and study casts, removal of hopelessly diseased teeth, adjustment of occlusion by grinding or restoration, removal of root deposits or apoxesis, careful instruction of patient in tooth cleansing and gingival massage, correction of dietary defects, subsequent prophylactic treatments. Some favored surgical resection and one, the use of epithelial solvent in treatment of the pocket. The unanimous answer to question 3, "What, in your opinion, is the one most important procedure in treatment which might be applied by the general practitioner?" —was prophylaxis and teaching effective mouth hygiene. Question 4, "How should the general practitioner equip himself for the practice of periodontia?" Answer in general is by study and practice. In addition around New York postgraduate courses are advised; in the south visits to the offices of periodontists, in the midwest attendance on society clinics. Everywhere reading and filing of periodontal literature was urged. Dentists* are advised to take up the study of periodontia as a means of greater service, of getting a deeper insight into problems related to other branches of dentistry and creating a new interest. The paper is ably discussed by C. B. Vaughan.

*in general practice.

—*H. J. L.*

34—Skillen, William G., D. D. S.: **Pyorrhea,** in: Chicago Dent. Soc. (Off. Bull.), x(21): 12-14. 1930.

A radio talk for the general public in which the author takes up the subjective symptoms, the insidious nature of the disease, its danger to health, its prevalence. He states that the direct cause is unknown, and emphasizes the general means of prevention, frequent examination, prophylaxis, home brushing and massage. The use of hard crusts for exercising the teeth is suggested; the danger of food impaction and need for the correction of irregularities is dwelt upon. While its manifestations occur in mature age, its beginnings should be looked for in youth, and the early gingival symptoms are described. The prognosis of pyorrhea once started is problematic. Skillful treatment will delay its progress but the author feels that there is no certain cure; but the success in treatment lies in prevention or treatment of the earliest signs.

—*H. J. L.*

35—Yaviani, Prof. Siro. (Naples): **Malattie del periodonto.** Diseases of the periodontium, in: Nuov. Rass. di Odont. (1): 1930. Abs. Z. Rundschau, xl(8): 348. Feb., 1931.

"A very exhaustive, one might-say—monograph of the disease with which we are most occupied. Not suitable for abstraction without destroying the general impression. 50 outstanding Roentgenograms. The text of the book also is highly commendable."

—*Copy.*

36—Tishler, Benjamin, D. M. D.: **The general practitioner's greatest need in periodontia,** in: Dent. Outlook, xvii (12): 539-543. Dec., 1930.

Periodontia is more prevalent among civilized people, although its effects are seen in skulls of very primitive people both ancient and modern. It is not just the result of faulty habits of civilized living. Its apparently increasing prevalence is largely a matter of growing recognition. Even yet, many dentists are frankly indifferent to it and take no pains to recognize its presence.

Successful treatment depends primarily on early recognition and elimination of causes. The best results follow treatment of beginning stages of the disease which usually occur in youth. Inflammation of the gingiva leading to extensive periodontal destruction may start so early as with the eruption of the teeth.

The conception of two types of periodontoclasia is helpful: the one, a horizontal progressive marginal gingivitis due to local causes; and the other, a diffuse alveolar atrophy involving deep pockets and caused by constitutional factors or traumatic occlusion or both. Color and contour conditions of the Gingivae may be very misleading. The reactions of individuals to a given irritant vary greatly. The best means of diagnosis of periodontal destruction are the exploration of pocket depth, minute observation of gingival changes and study of radiographs for changes in bone and pericementum. These tests should be made a routine in the dental examination of every patient.

H. J. L.

37—Tracy, William D., D. D. S.: **Periodontoclasia and its obligations from the point of view of the general practitioner,** in: J. Am. Dent. A., xvii(3): 396-400. Mar., 1930.

The author, as a general practitioner, has brought out the point that, in the present day of specialization, the responsibility of the health of the patient's mouth must be shared by those who are in charge of the patient, and a whole hearted coöperation shown.

The real responsibility of the general practitioner is to see that the patient not only receives proper treatments so far as restorative dentistry is concerned, but to keep in mind the health of the soft tissues and supporting structures of the teeth. He must finish the filling, inlay or restoration of whatever nature and, not only seal the cavity with a view to preventing further caries, but do it in such a manner that its proximal contour will be restored and no roughness or irritating influence will be present to damage the gingiva.

If the dentist finds that, in spite of his best efforts, he is failing to restore and control the health of the tissues, he should recognize it as his duty to refer the patient to a competent and experienced periodontist. The periodontist, in turn is in a position to note the early evidence of caries and defects in work, and should make a chart noting all such items, and send it to the dentist who is sharing the responsibility with him.

Both the general practitioner and periodontist should assume the obligation of educating the patient in the matter of the proper care of the mouth and teeth. The responsibility of a healthy mouth must be shared by both, and a whole hearted coöperation and interest shown in the patient.

S. R.

Supplementary 1929

38—Veyrassat, Jean (Geneva): Les contre-indications de l'anesthésie locale par la novocäine ou ses succédanés, in: Le mondemédical, xxxix: 656, June, 1929.

The author considers only the contra-indications of local anesthesia, by the infiltration of anesthetic solutions into or in the immediate vicinity of the lesion; and warns against the practice of local anesthesia upon a pyorrheic gum since it may give rise to an extensive suppuration of gum and jaw; he describes a case with fatal result; and emphasizes the fact not that all cases are fatal but that the peri-alveolar gingival infiltration may pave the way for mandibular abscess or osteomyelitis.

39—Zemsky, James L., D. D. S.: Root resorption and its clinical significance, in: J. Am. Dent. A., xvi(3): 520-545. Mar., 1929.

Clinical and roentgenologic studies indicate that there are several different types of root resorption. Diagnoses of these different conditions can only be made from roentgenographic examination. Error in treatment should be avoided so as not to permit the existence of pathology, or to unnecessarily sacrifice healthy structure. Evidence of simple resorption is not indicative of extraction, regardless of whether the tooth is vital or pulpless. Every case must be considered individually, and an attempt made to determine the cause and remove it, if possible.

Root resorption is mostly a symptom of disease and not a cause. Careful observation over a reasonable period of time is imperative in order to note repair or further degenerative change.

—C. J. C.

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American Dental Association to Join With Chicago Centennial Dental Congress in 1933

THE 1933 meeting of the American Dental Association will be held in Chicago in conjunction with the Chicago Centennial Dental Congress. All the legislative and scientific sessions and the commercial exhibition will be held in the Stevens Hotel, August 7-12, inclusive. These dates were chosen so that the sessions of the Congress would be held during a most delightful week of the Chicago Century of Progress Exposition, popularly known as The World's Fair.

In order that everyone may have a proper conception of the origin of the Chicago Centennial Dental Congress, the following historical facts are recorded. Almost three years ago when preliminary plans for A Century of Progress Exposition were being formulated the Chicago Dental Society received a request from Mr. Rufus Dawes, President of the Exposition to arrange for a meeting of dentists in Chicago during the period of the Exposition. It was suggested by Mr. Dawes that this meeting be international in scope and portray the progress in Dentistry during the past one hundred years. This theme coincides with that of the Exposition, the purpose of which is to portray the advances made in all branches of human endeavor during the period of Chicago's existence, which will be one hundred years in 1933.

The Chicago Dental Society, in order to meet this request decided to postpone its 1933 Annual Meeting, originally scheduled for January, and stage a meeting during the period of the Exposition which would eclipse, from every angle, any dental meeting held up to that time. To carry out this broad purpose the Board of Directors of the Chicago Dental Society appointed a Commission which ultimately developed the Chicago Centennial Dental Congress. The Congress now functions as a separate and independent unit.

At the Memphis meeting of the American Dental Association, held in October of 1931, the officers of the Congress consisting of Drs. Arthur D. Black, President; Hugo G. Fisher, Vice-President; Stanley D. Tylman, Secretary; and Christian Davidson, Treasurer, presented to that Association an invitation to hold its 1933 meeting in Chicago in connection with the Congress. The invitation was tentatively accepted and a committee was appointed to work out the details with officials of the Congress. Several meetings were held and a mutually satisfactory agreement reached. Final action has since been taken.

With the coöperation of the editor of this magazine we will, in the several issues to be published before the opening of the Congress, give complete and detailed information concerning this great dental Congress. We know that every member of organized dentistry throughout the world will want to attend and see and learn what his profession has done for the health and happiness of the human race.

The vacation aspect of A Century of Progress Exposition is immediately apparent. Never in the history of dental meetings has there been the equal of such an opportunity to combine business, education and pleasure.

The Chicago Centennial Dental Congress invites you. Make your plans now, distant as the date may seem, to participate in and enjoy the benefits of a dental gathering which will be a landmark in the annals of our profession.

ARTHUR D. BLACK, *President*
STANLEY D. TYLMAN, *Secretary*

Organization of an International Association for the Study of Paradentosis

(Association Pour Les Recherches Sur La Paradentose)
(Arbeitsgemeinschaft für Paradentoseforschung)
(Associazione Per Le Reserche Sulla Paradentosi)
(Association for Research in Paradentosis)

The ARPA International was definitely organized at Frankfort on Main, on May 30, 1932. At this first meeting three countries were represented: Germany, by Weski (Berlin) and Loos (Frankfort); France, by Hulin (Paris); Switzerland, by Jaccard and Held (Geneva).

Various questions that were studied at a preliminary meeting, held November 29, 1931, and attended by Hulin, Oestmann, Weski, Loos, Boenheim and Citron, were brought forward and discussed.

The following points were adopted:

A. ORGANIZATION

1. The ARPA International is an organization destined through the intermediary of its secretary's office to facilitate the exchange of ideas on the subject of paradentosis.

2. The objects of the ARPA International are the following:
   a. The initiation of confreres into the study of paradentosis which must be considered as of the same degree of importance as dental caries.
   b. The stimulation of a more intimate coöperation between internal medicine and odontology.
   c. The study of paradentosis from the standpoint of its recognition by social agencies (in those countries which are interested in this phase of the question).

3. The ARPA International, for the time being, will not have an autonomous publication. In each country possessing a National ARPA a local dental journal will have charge of the publication of the studies on paradentosis.
   e. g. Germany: "Zahnärztliche Rundschau."
   France: "Odontologie."
   Switzerland: "Revue Mensuelle Suisse d'Odontologie."

The articles in each of the journals will be translated in extenso or abstracted in the respective languages of the other journals and published in them.

The work of translation will be taken care of by the ARPA National which reprints the publication.

4. The International ARPA will be under the auspices of the F. D. I. (under reserve of ratification by the Executive Council of the F. D. I.) and will meet each year, if possible, at the same time as the F. D. I.

5. The general secretaryship, represented by Jaccard and Held has its headquarters at Geneva; it has charge of collecting all articles relating to paradentosis and of indexing them.

Two copies will be kept at the Secretary's office and one copy will be remitted to the International Dental Documentary Center at Brussels.

6. The meetings will be presided over in rotation by each of the countries represented. Each annual session will name its president.

7. Each National ARPA will have its own organization conforming to the conditions of the country it represents.

8. A National ARPA is recognized if it has been approved by the annual assembly; it must, as a general rule, announce itself to the International Secretary six months before the annual assembly.

9. The International Secretary receives an annual subsidy from each of the National ARPA; the amount of this subsidy will be determined at a subsequent date.*

The clauses here above enumerated will be submitted to the first General Assembly of the International ARPA for its approval, which will be held August 7, 1932, at the University of Zurich.

French ARPA Committee: Roy, Hulin, Georges Villain, Delater, Housset.

Swiss ARPA Committee: Jaccard, Jung, Held, Baumann, Keller.

German ARPA Committee: Linnert, Siegmund, Boenheim, Citron, Loos, Weski.

Italian ARPA: Palazzi.

B. CLASSIFICATION OF PARADENTOSIS

Following a lengthy discussion, it was decided to modify as follows the classification of paradentosis as it had been proposed by the 4th Section of the Eighth International Dental Congress:

I. Gingivitis Marginalis

II. Paradentosis
   1. Inflammatoria
   2. Mixta vel combinata
   3. Atrophica

III. Atrophia senilis physiologica**

* Germany announces an annual subsidy of 400 gold francs. Hulin will obtain the same amount from France.

** In view of the divergence of opinion, expressed by correspondence after the Frankfort meeting, the term, "atrophic" (3rd type of paradentosis) is not as yet definite; this question will be clarified at the Zurich meeting.

Following the motion made by the Swiss ARPA, in order to promote a better understanding in the different languages, it was decided to use Latin terms.

C. FIRST ANNUAL ASSEMBLY OF THE INTERNATIONAL ARPA

It will be held Sunday, August 7, 1932, at ten o'clock, at the University of Zurich. This meeting will immediately follow the 27th session of the F. D. I.

Two papers will be presented:

Weski (Berlin): "Die dystrophische Komponente der Paradentose" (type 3)

Hulin (Paris): "Subject to be announced."

Invitations have been addressed to confreres asking that they form local National committees in the following countries:

England	Finland
Austria	Hungary
Argentina	Italy
Belgium	Norway
Denmark	Russia
United States of America	Sweden
Holland	Czecho-Slovakia

Steps have already been taken to form a committee in the United States. Those interested should communicate without delay with Dr. Hermann Becks, George Williams Hooper Foundation for Medical Research, 2nd and Parnassus Avenues, San Francisco, California.